

MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL
RAILROAD AND FINANCIAL NEWSPAPER.

HELP WANTED SITUATIONS WANTED

Advertisements under these two headings will be published free of charge in the MANUFACTURERS' RECORD. Such advertisements must not exceed four lines, or about twenty-five words, and four consecutive insertions will be given in our columns without charge. Replies addressed in our care will be forwarded to advertisers. The extended circulation of the MANUFACTURERS' RECORD and the care with which its pages are read make this opportunity one of exceptional value. We offer it freely to our patrons and friends, and ask them to make liberal use of it.

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VOL. XXI.
No. 25.

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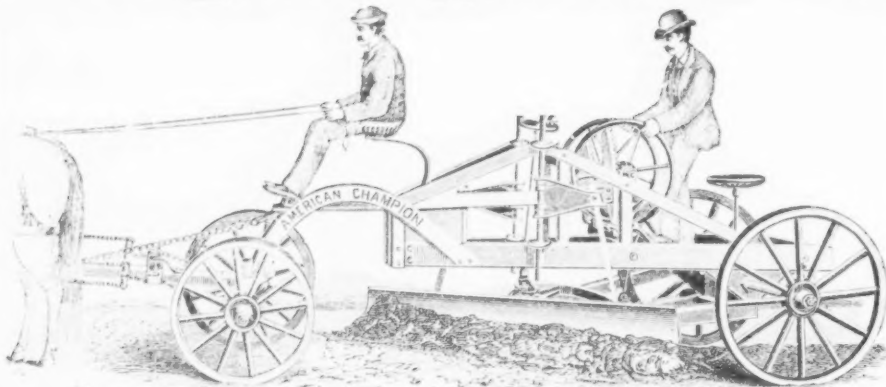
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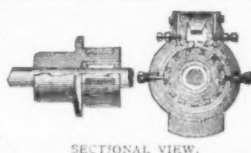
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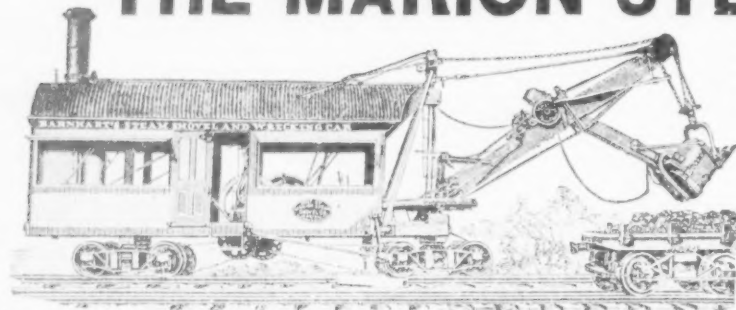
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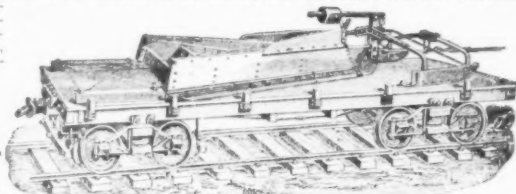


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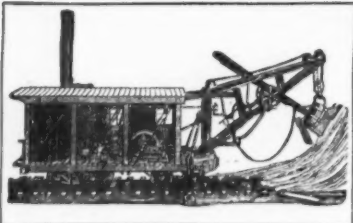
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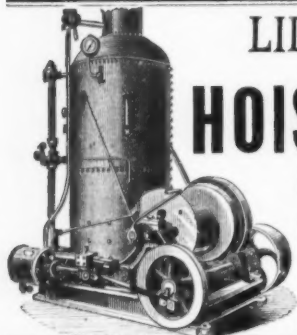


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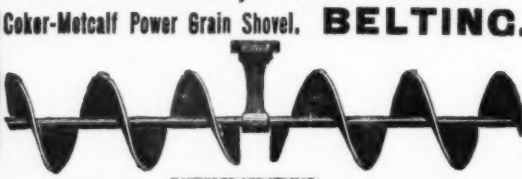
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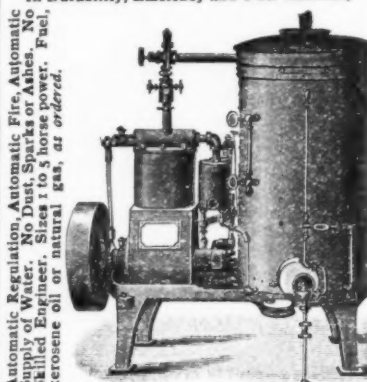
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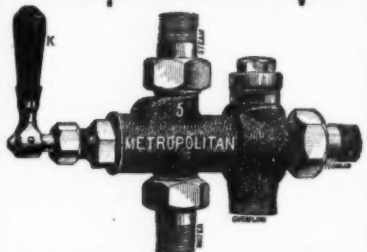
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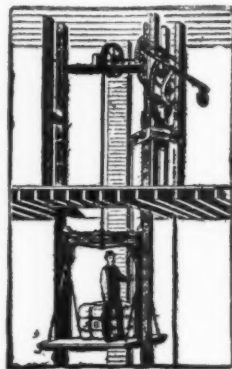
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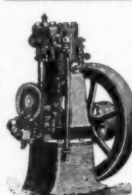
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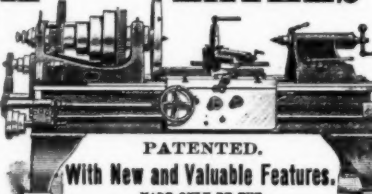
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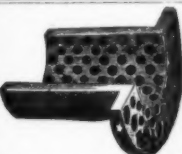
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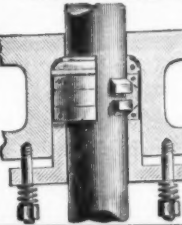
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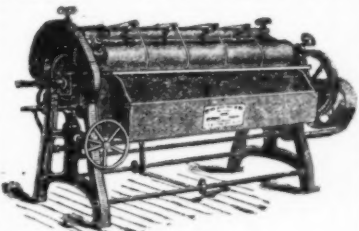
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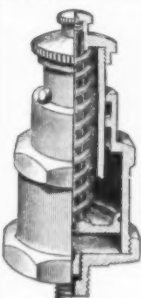
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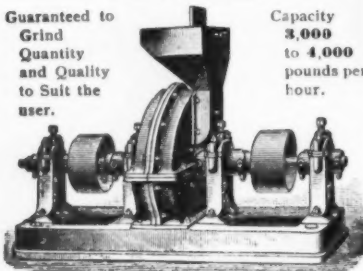
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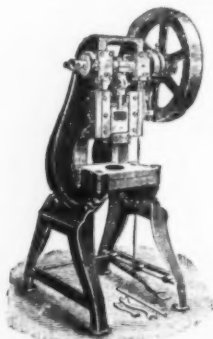
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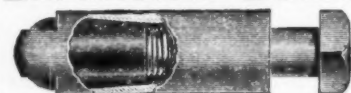
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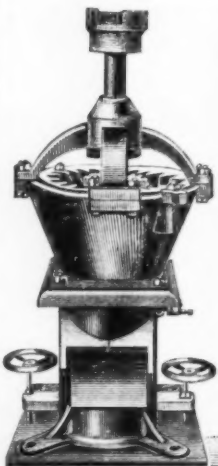
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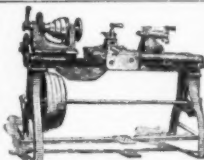
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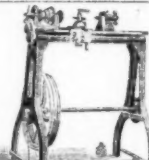
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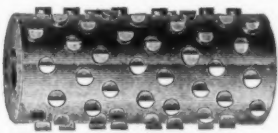



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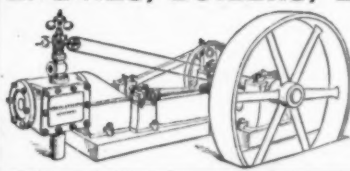
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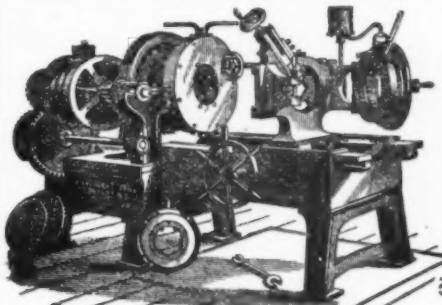
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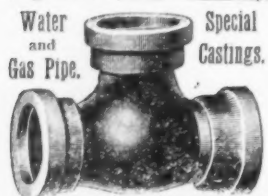
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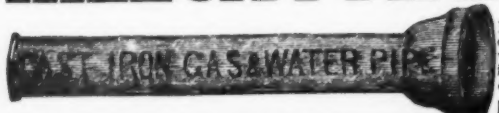
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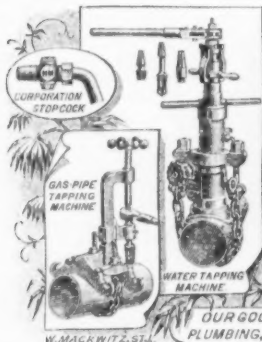
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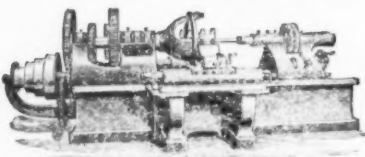
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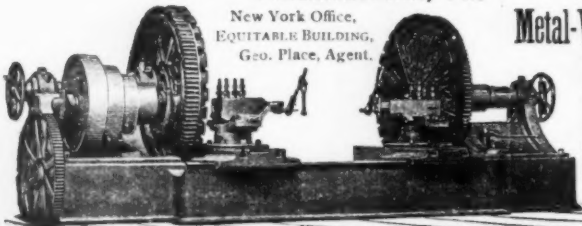
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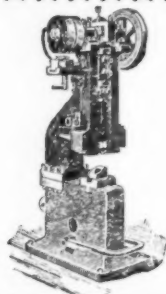
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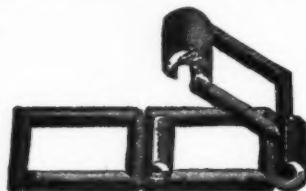
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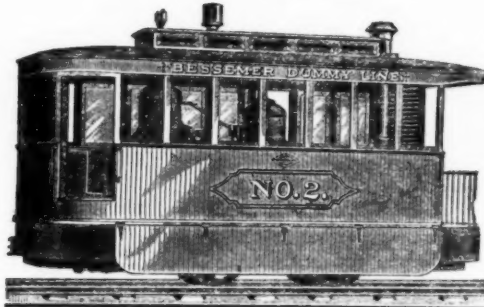
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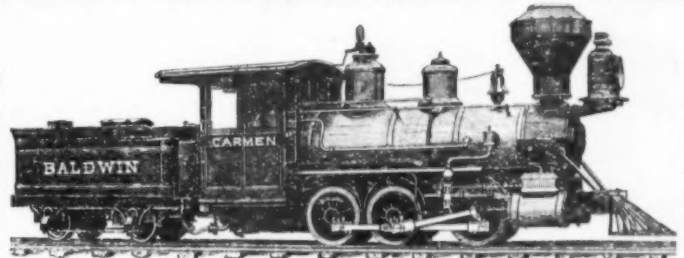
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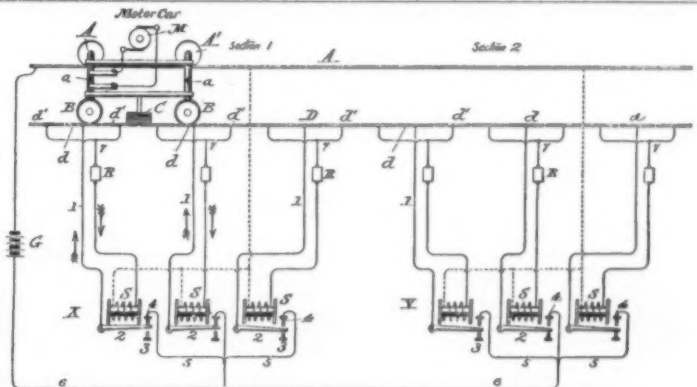
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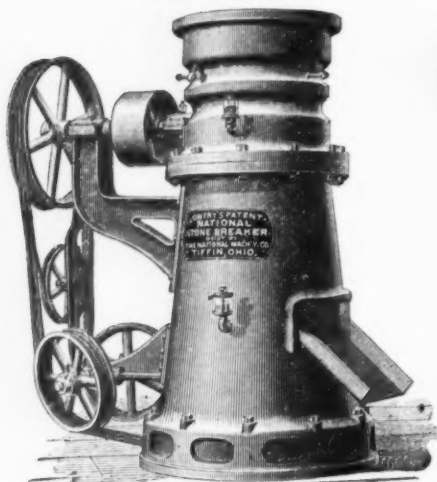
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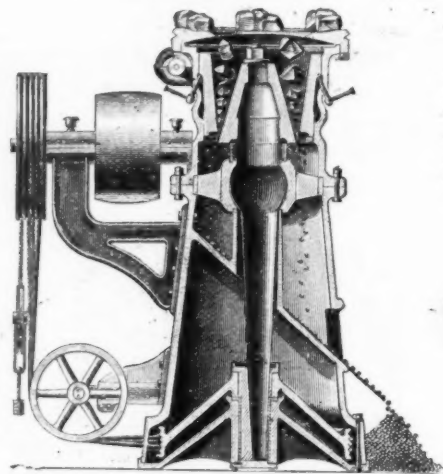
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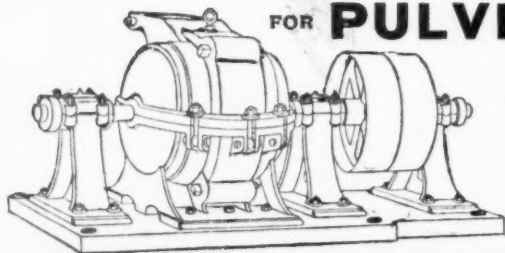
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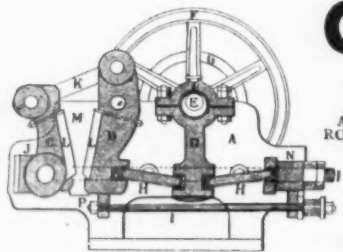
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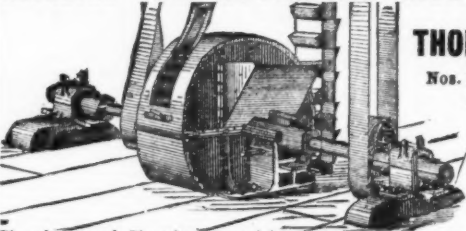
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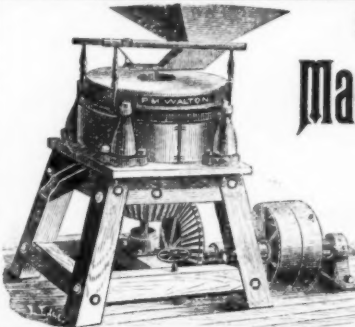
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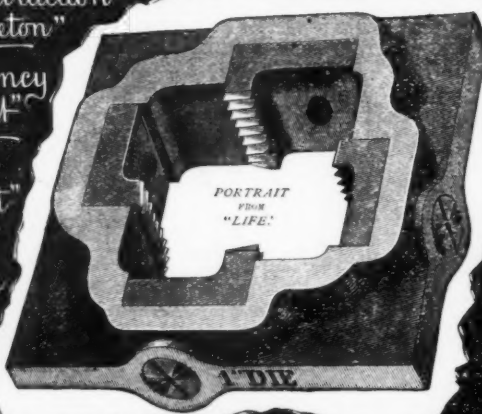
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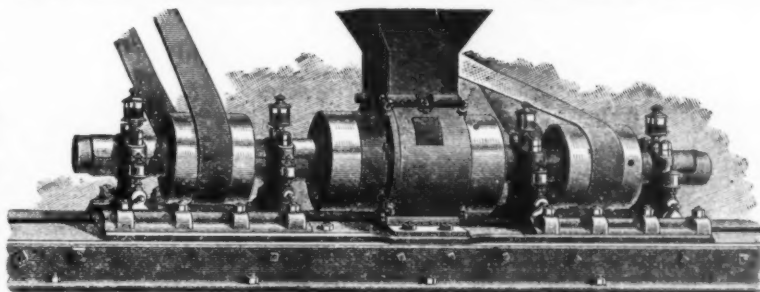


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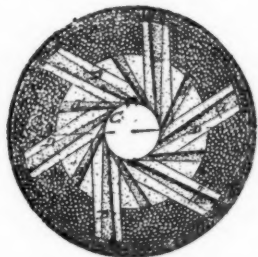
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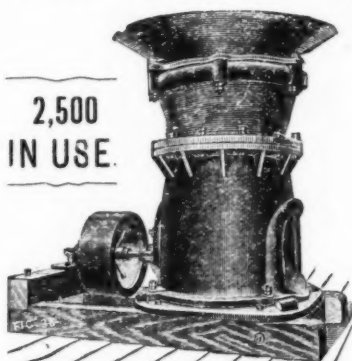
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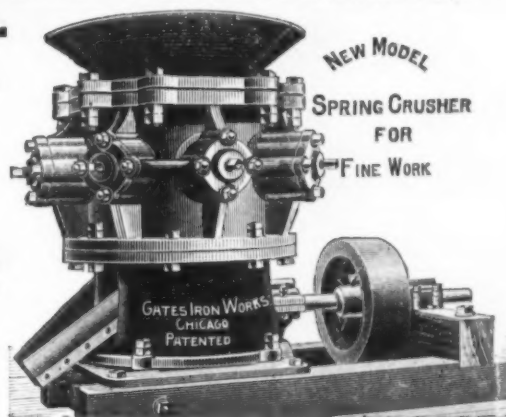
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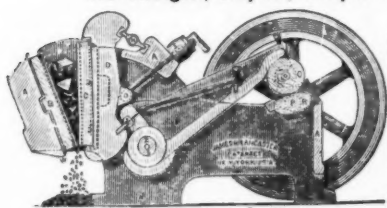
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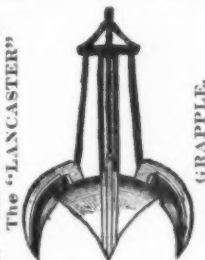


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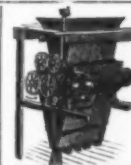
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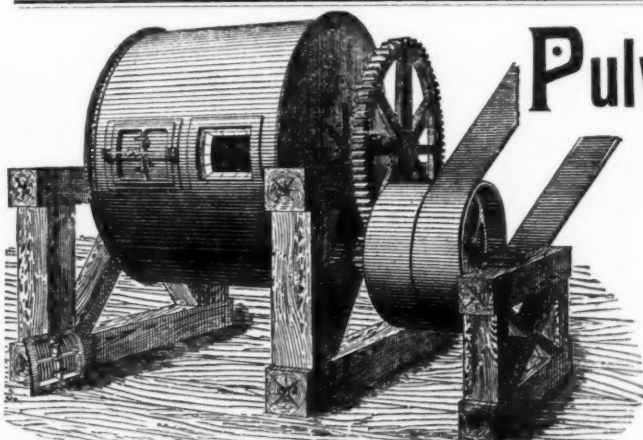


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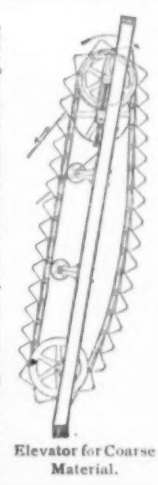
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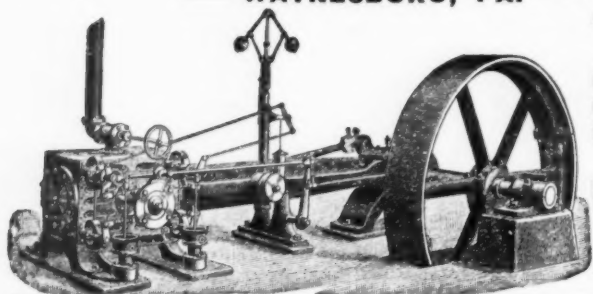
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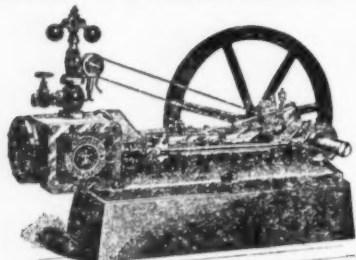
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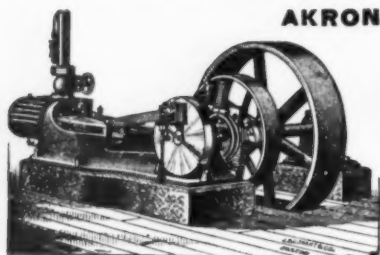
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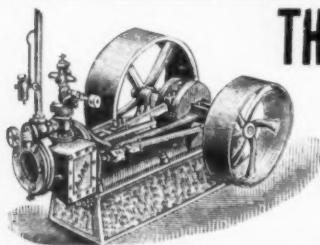
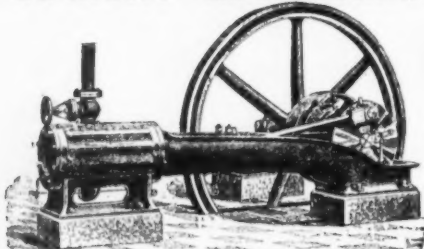
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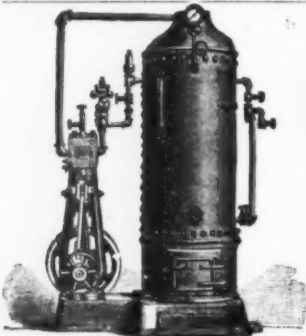
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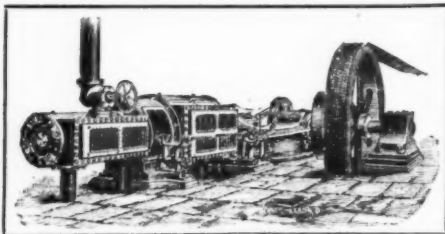
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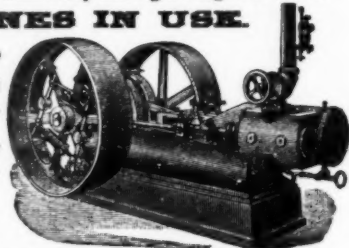
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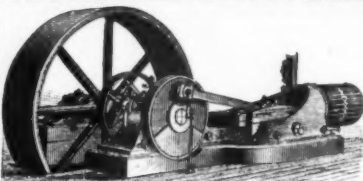
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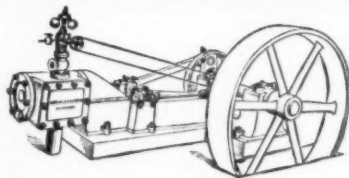


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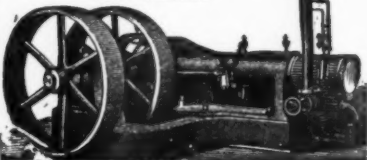
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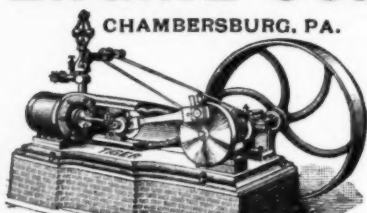
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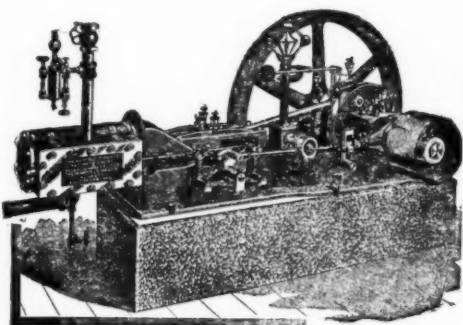
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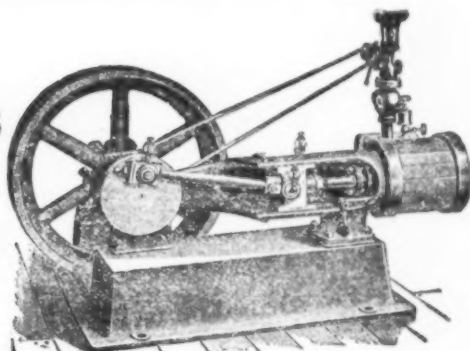
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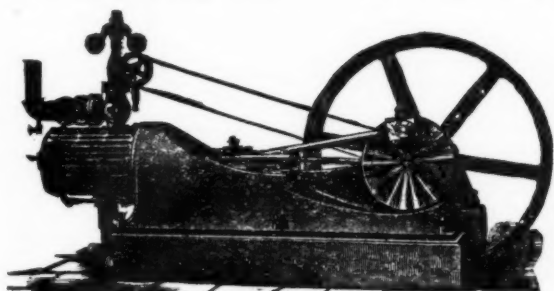
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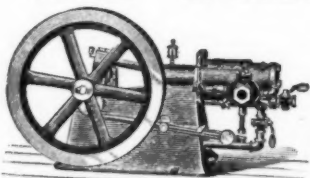
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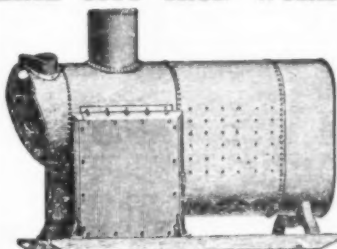
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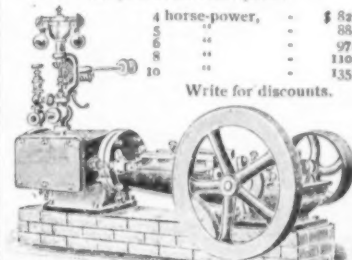
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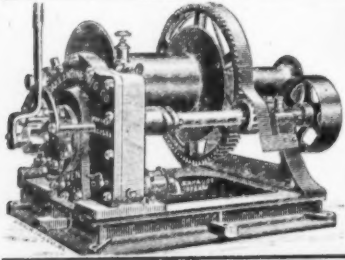
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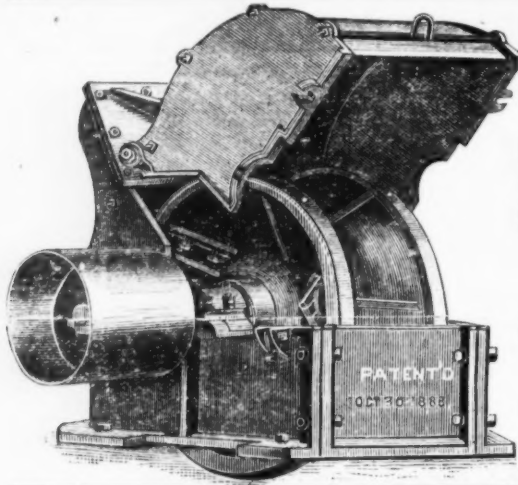
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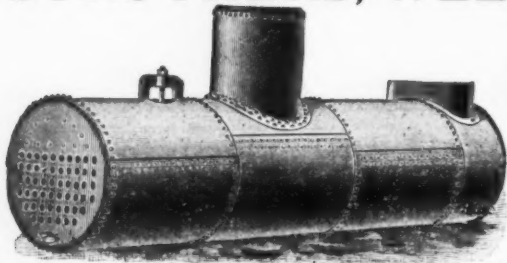
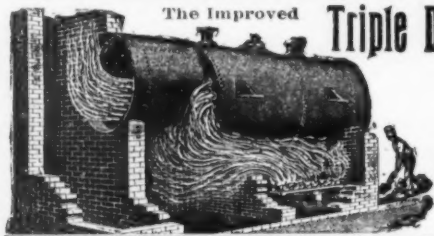
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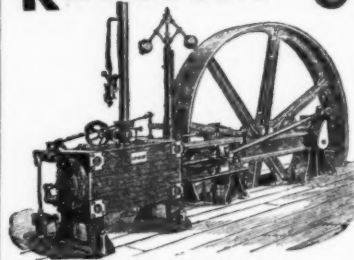
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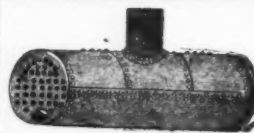
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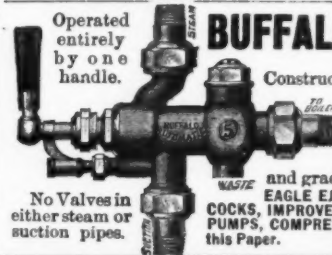
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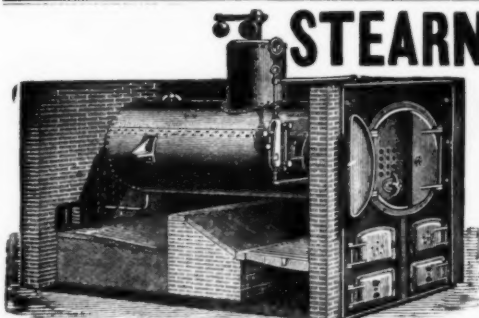
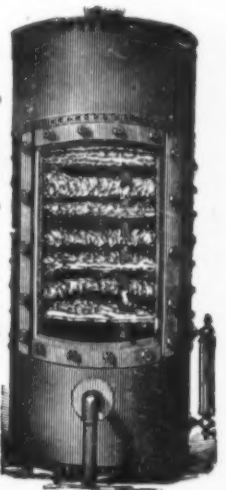
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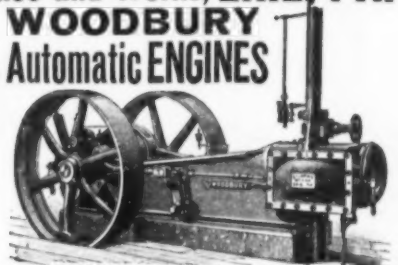


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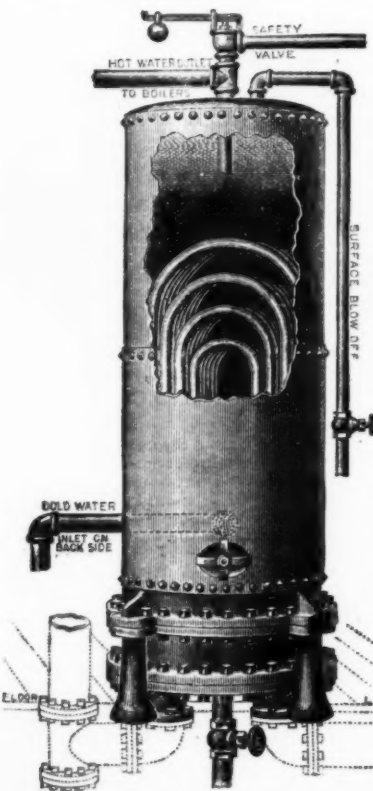
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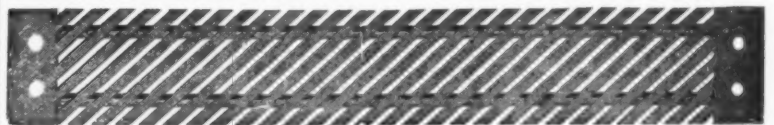
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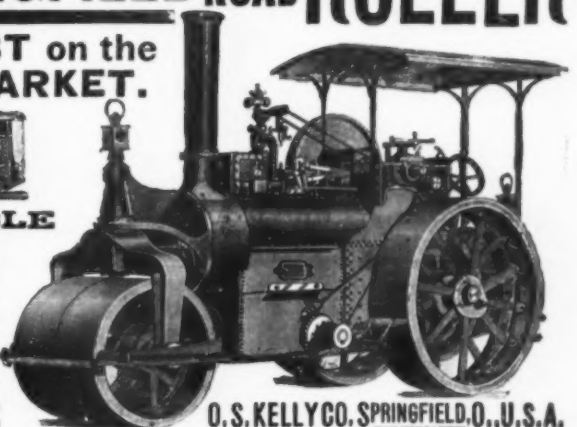
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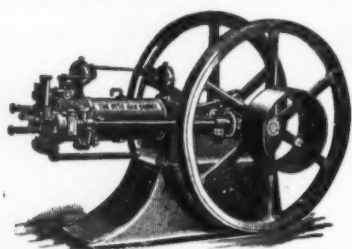
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THE MANUFACTURERS' RECORD

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How the South Is Drained of Its Money.

[A speech delivered before the Bank Presidents' Association in Boston by Hon. Hilary A. Herbert, member of Congress from Alabama.]

The portion of the country from which I come needs a circulating medium, if such a thing be possible—good, sound and redeemable, of course, but at the same time such a medium that will not leave us when our crop of cotton is sold and all go to the money centres. It is an easy matter when a demand of this kind is made to say that we can get and keep money at home by labor and economy. A so called financier advertised that for twenty-five cents he would tell how to make a fortune. The reply he sent to those sending twenty-five cents was: "Work like — and don't spend a cent." I do not much exaggerate if I say to you that is just what our farmers in the South have been doing for the past twenty-five years. They have labored faithfully and haven't spent money. It has taken all they could get together to pay debts, and some of the debts are not paid yet. That you may understand the situation as I see it let me go back a little, reciting only facts that are within my memory.

Nearly everybody in the South had credit prior to our civil war. One reason for this was that property was steadily appreciating in value owing to the influx of gold from the mines of California and Australia into the circulation of the world. As everybody had credit, everybody went into debt, so, when the civil war had swept over us, we were the most thoroughly bankrupt of any people in the world. Then we tried, of course, State laws and all the machinery of delay our State legislatures could devise. Then came as a boon the United States bankrupt law of 1867, but before we could wipe out under that along came the carpet-bagger. The war had bankrupted individuals, and the carpet-bagger bankrupted States and counties and cities. I shall not stop to picture to you the utter desolation of the dark days of reconstruction in the South. Some idea may be formed if you will call to mind the complete revolution in the mind of that great, big-brained philanthropist, Horace Greeley, as he contemplated the ruin that had been wrought by the system he had done so much to maintain. As he looked upon the situation in the Southern States his great heart melted with pity, and in his old age he broke away on this question from the party with which his fame and his fortune had been bound up during all the best years of his life. The immediate horrors of reconstruction finally passed away, when we succeeded in re-establishing honest, economical governments. We restored the credit of all our States in the money markets of the world. It took time to accomplish the result. Capital is naturally timid, but finally you saw that we had honest and stable State governments, you became convinced that your property would be protected by our laws. Then you began to deal in our State bonds and to send your capital down among us. Now, by means of our own and your money, we are beginning to develop our measureless mineral resources, and we are embarking in

manufactures. But our farming interest is still our chief concern, and that is languishing. You ask, "Why?" In what I am about to say, I am sure I shall not be misunderstood. I do not intend to trench upon politics, but if what I may say should run counter to the preconceived political opinions of any gentleman who may hear me, I am quite sure I shall not offend, for Boston is the home of free speech. He who speaks in sight of Bunker Hill monument need not fear to speak as he thinks.

My purpose is to account for the straitened condition of the people, and more especially of the farmers of the South, and for some of the financial heresies which now obtain there, by a recital of facts. Then I shall leave it to you, gentlemen, who are skilled financiers, to say whether there is not some reason in the complaints made in the South that our money is drained away from us by the operation of laws, natural and artificial, over which we have no control. Also whether some remedy cannot be devised.

Our farmers have labored faithfully. Cotton is our great staple. The crop has increased steadily from 2,000,000 or 3,000,000 in 1866 and 1867 to 9,000,000 in 1891. What has carried off from us all the immense revenue coming from this source? First, federal taxation has been enormous; nearly or quite one-third of all the money in the United States has gone annually into the treasury of the United States and then gone out again, not always or everywhere to the sources from which it was derived, there again to supply the wants of the community, but nearly all of it to the North and West. Federal taxes are not laid upon property. If they were, they would be laid according to wealth. If taxes were apportioned according to ability to pay, the poorest sections of the country would pay the least taxes. But our taxes are imposed on consumption. The necessities of men are nearly equal. Therefore taxes are drawn from all sections in proportion—to some extent, at least—to population. There is a steady stream of money flowing into the treasury from every hamlet and homestead in the land. Now, I am not discussing the tariff. I am not speaking of the immense amounts to go out of the pockets of the consumer of manufactured goods and never get into the treasury at all. I am speaking of the taxes that go into the treasury. These taxes are alone, as I have said, immense. Our government in 1860, when our population was 30,000,000, expended altogether \$82,000,000. With a little more than twice that population we now spend more than \$450,000,000. Nearly or quite one third of this comes from the South. Certainly you will agree with me that more than one-quarter of it does. How much of it goes back there?

We get a share of the salaries from offices; we get a fair share of postoffice accommodations; we get a fair share of the river and harbor appropriations when a bill passes, which is, say, once in two years—say about \$8,000,000 out of \$21,000,000. There we stop. Practically all the expenditures for the army—more than \$22,000,000—go North. All expenditures for the navy, building and maintaining it—more than \$22,000,000, excepting a few hundred dollars for coal—go North. Of

these sums, as of all others expended by the government, the South pays its share—nearly one third. Of our bonded debt, none of it was held South when the war closed; very little is now. Of the vast expenditures for pensions an infinitesimal portion goes South. Since 1865 we have paid of the principal of the public debt over \$1,875,000,000. Since July, 1861, we have paid of interest on the public debt, \$2,501,000,000, amounting certainly to \$2,400,000 since July, 1861; and in that same period we have paid more than \$1,400,000,000 in pensions, amounting altogether to \$5,675,000,000. For the purpose, therefore, of paying the public debt and pensions it is safe to say, counting only one-fourth of that sum, that there has been taken from the South by the hands of the tax-gatherer and distributed in the North by the hands of the government within the last twenty-eight years more than \$1,400,000,000. And conditions do not improve. There is no hope that they will. As interest on debt goes down pensions go up. The estimate for the present year is over \$147,000,000. Soon it will reach \$200,000,000. I have said nothing about the millions of dollars profit paid by the South to the life and fire insurance companies in the North; nothing of the vast sums going in the same direction for food and clothing; nothing of the interest on borrowed money; but I think you see, gentlemen, where our cotton crops have gone.

Add one other fact—that the price of this great staple, cotton, has gone from say twelve to thirteen cents twenty years ago to six cents; and then the other distressing circumstance that, being all the time indebted, the Southern farmer has all the time been compelled to pay high rates for money with which to make his crop, and you have before you the reasons why he is poor to-day. You understand why thrift has not followed industry. Now add another fact. Our Southern people have been forced, or felt themselves forced, a portion of them, to unlearn some of their theories of government. They were taught that the best government is that which governs the least, which leaves the citizen the greatest amount of liberty, which cultivates in him a spirit of independence, which teaches him to rely upon himself and not upon his government. The federal government especially they have supposed was limited in its powers—had no parental authority. For thirty years past the revenue laws of the land have been framed and maintained upon the avowed theory that it was the duty of the government to so legislate as to increase the wages of labor. True or false, thus is the door thrown wide open by capitalists through which socialism is invited to work into the control of the government, to be followed in the future, perhaps, by agrarianism. See how the Farmers' Alliance reasons: Shall the government always tax us for the benefit of others? If it raises the wages of other labors by taxing us, shall it not help us also? Shall it not give us money on our crops at 1 or 2 per cent.? Shall it not take possession of railroads and give us cheap transportation? These doctrines are pernicious heresies. They would lead to the ruin of the farmers themselves, to the subversion of our system of government; but they are the natural offspring of

the theory of protection, which teaches that government must regulate the wages of labor, and so they flourish most where the condition of life among the farmers, as brought about by the laws of the government, are hardest among the farmers of the South.

Another grave question of the hour is silver. It is not of kin to socialism, neither can it be compared to the sub-treasury question, as the loan of money on farm products is called, for over the question of coining silver the government has by the constitution full power. Free coinage is simply a question of expediency, of governmental policy, and as such is entitled to the most respectful consideration. On the side of the monometallists it is urged that government has absolutely no power over value, that it can assay and stamp weight and fineness, and that there its power ceases. The silver men reply that the government is now circulating at par with gold over \$300,000,000 of 70 cent dollars, and that the basic proposition of the extremist is answered. To the argument that government cannot give more than its intrinsic value to silver by stamping it as a dollar, the conclusive reply is: It has done it. Starting out with this postulate, to which the extremist on the other side has helped him, the silver extremist, triumphantly relying on the one point he has gained, goes on to assert that because the government circulates \$300,000,000 of silver at par, therefore it can circulate \$3,000,000,000, which is just as absurd as to say that because I could make a piece of paper worth \$100 by my signature, therefore my note would be good for a million. All experience shows that a stable government may, to a limited extent, have power to do what our government is doing, but that it is an easy matter to transcend the limit of that power and bring ruin to its currency. The weight of the argument is against the power of this government to maintain silver at par without the help of other nations. Certainly the countries of the Latin union did not think they could maintain free coinage with all their power combined. If they had thought so they would have tried it, for they were all in favor of bimetallism. So also, as free silver has been discussed it has lost ground in this country. In 1878 a free coinage bill passed the House by a two thirds majority. Recently such a bill failed to pass the House. There is no probability that such an experiment will ever be tried by the United States alone. But if by international agreement among nations sufficient to maintain it silver could be remonetized, such remonetization would arrest, I believe, the gradual downfall of prices that has been going on for twenty years past. It would restore prosperity and contentment. When this is to come about, or whether it is to come at all, no man can tell. But while this question as to whether such an agreement will ever be made is in abeyance, it behooves all far-seeing men to cast about and see whether something may not be done to supply an admitted want, to relieve discontent and aid us who are engaged in the work of combating such impracticable schemes—the seizure of railroads by the government, the loan of money by the government at 2 per cent.—as well as also every other scheme that

would deprive the country of a sound currency.

I know as well as you do, gentlemen, that bankers prosper most when the country is prosperous, and I confidently appeal to you—not only to your sense of patriotism, but to your sense of self-interest as well—to give your attention and your help to any scheme that promises to alleviate the situation. North, South, East and West we are one country. The prosperity of one section contributes to the prosperity of all. Let it be the concern of all of us to have and preserve a sound, healthful currency that shall circulate in and keep full not only the centres but the arteries and veins of trade and commerce in all the extremities of our great body politic. So shall we help to conserve in health and vigor, performing all its normal functions, that great government under whose protecting care the people of America are blessed beyond all the nations of the world.

Alleged Depression in the South.

[From the *Morning Herald*, Baltimore.]

If the gloomy utterances of certain writers upon the progress of the South are to be believed, that region is undergoing an unexpected period of depression. The price of cotton has been unprecedentedly low, other agricultural products have not enabled the planters to realize profitable returns, and matters industrial appear to be on the down grade. The picture is quite sombre according to these prophets of evil. But intelligent observers of the situation are not particularly moved by this view. It is not true to the facts, and there is abundant evidence to prove that the South is prospering beyond any other section of our country. That there is depression in cotton is granted, but the cause and cure were pointed out a year ago, and a reaction is already visible. There may be less of the "boom" spirit than there was two years ago, but the agricultural drawbacks of the South are hardly to be compared to those of Kansas and of other parts of the West, while manufacturing industries have gone on with their allotted tasks, and the number of plants is constantly increasing. For instance, during the first six months of the year 375 miles of new railroad were built in what is called the South. Even West Virginia, with its poor trade in iron and coal, has added almost 100 miles of new tracks to its facilities for transportation. Texas has added fifty miles and other States varying amounts. This is indeed a good showing for a bankrupt country, and the facts go to prove that the South is really forging ahead in spite of a temporary depression visible at a few points. Every region has its ups and downs, so to speak. The North and West have had theirs, and the South cannot escape the inevitable works of the laws of trade. But that the period of depression so loudly complained of is anything more than a transitory swinging backward of the pendulum of progress few reflecting men will believe.

The company operating the Du Pont paper mill at Louisville, Ky., have been in financial difficulties for some time past, and in order to straighten out affairs appointed a committee to draw up a general plan of reorganization. This has now been made public, and is that the holders of the second and third mortgage bonds, amounting to about \$305,000, surrender their holdings and accept stock for it. Outside creditors, representing about \$10,000, are to accept stock for their accounts, and the first mortgage loan of \$50,000 is to be allowed to stand. A new loan of \$28,000 is to be made on second mortgage bonds. This will leave the company in good shape, and if it is carried through they will resume operations.

Atlanta is the South's Main Railway Centre.

By Col. I. W. Avery.

There is an important history connected with Atlanta's soubriquet of the "Gate City of the South" that carries great significance, and embodies in the name the distinction of the city as the chief railway centre of the whole South.

As far back as the year 1857, only ten years after the place was incorporated as Atlanta, having been dubbed "Terminus" in 1837 and chartered as "Marthasville" in 1844, a great gathering of practical business men was held in Charleston, S. C., and after a thorough review of the whole Southern section, impartially and unanimously settled upon Atlanta as the leading railroad point of the South, and christened the vigorous young giant of a municipal infant as the "Gate City," which name it has enjoyed ever since undisputed.

This distinguishing title was won and has been held by her threefold qualities of centrality, accessibility and unequalled network of railways, existing and prospective, of which the city is the centre. No other city has just such a location.

Atlanta to Atlantic cotton belt ports, air line, 260 miles.

Atlanta to Gulf of Mexico ports, air line, 270 miles.

Atlanta to the Mississippi river, air line, 340 miles.

Atlanta to northern line of cotton belt, air line, 200 miles.

Atlanta is thus by nature and without a rival the interior commercial market of this great and favored section.

Resting on a plane 1,085 feet above the sea-level, with its perfect climate, delightfully breezy even in the hottest months, absolutely free from malarial taint, and with its unequalled healthfulness, Atlanta, by an inevitable destiny, must become what she is swiftly striding to be, the coming manufacturing city of the South.

This stamps Atlanta as the best place in the South for profitable investment.

Her railway facilities already surpass those of any other Southern point. Eleven great railroad lines centre here:

1. The Central Railroad system, to the sea.
2. The Richmond & Danville system, north.
3. The Atlanta & West Point, to the Gulf.
4. The Atlanta & Florida Railroad, to Florida.
5. The Georgia Pacific Railroad, to Birmingham.
6. The Western & Atlantic, now Louisville & Nashville, west.
7. The East Tennessee, Virginia & Georgia Railroad, west and to the sea.
8. The Marietta & North Georgia Railroad, northwest.
9. The Georgia, Carolina & Northern Railroad, north.
10. The Atlanta, Covington & Macon Railroad, to the sea.
11. The Georgia Railroad, north and to Charleston and Port Royal.

Other lines are contemplated, and work is actually going on to complete branches that will be prolific feeders for the city.

It will thus be seen that Atlanta affords a sure spot for location or investment.

Atlanta is the centre of thousands of miles of railway track, linked in symmetrical connection with great ocean steamship schemes, ramifying the South, riveting the South Atlantic ocean to the West, Northwest, North and the Gulf. Ponderous steamers bind it to New York, Boston, Philadelphia, Baltimore, and now soon to Liverpool and Bremen, through Brunswick.

The Southern Railway and Steamship Association has its headquarters in Atlanta, and controls freight for all the railroads south of the Ohio and east of the Mississippi rivers and ocean steamship lines be-

tween the Southern ports and Eastern cities. The commissioners of the Southern Passenger Association are also in Atlanta, and control Southern passenger traffic.

Atlanta's possibilities from her railway environment cannot be estimated. She must become the greatest interior mart of the South.

Direct Trade for Brunswick, Ga.

Col. I. W. Avery, of Atlanta, who has been working indefatigably for the establishment of direct steamship lines between Southern ports and European centres, chronicles the first substantial result of the movement in the *Atlanta Journal* as follows:

The first victory of the direct trade movement has been scored by plucky Brunswick in establishing a line of freight steamers, with limited passenger accommodations, between Brunswick and Liverpool and Bremen, for which those enterprising gentlemen, Mayor T. W. Lamb, Col. C. P. Goodyear and Mr. Carpenter, have been working.

This is the beginning of a grand end.

This effort for direct trade is inspiring spontaneous and universal indorsement, suggestion and good wishes from every quarter.

Letters are pouring upon Colonel Stovall and myself from statesmen, capitalists, railroaders, merchants, farmers, manufacturers and all other classes emphasizing the need of it, urging its prosecution, making suggestions, extending co operation, proffering sympathy, recounting its benefits and wishing its success.

The testimony to its hold upon the public mind as an agency of good is simply overwhelming. No movement since the war has had such a backing of public sentiment and so easy a prospect of achievement.

The responsibility for securing the complete direct trade and making it permanent now rests upon the railroads from the Georgia ports on the Atlantic to the great West, which have only to unite in giving to the English steamship companies, eager and ready to put on the best lines of fine steamers, the freight that they can control to make the lines pay, to increase their own business and benefit the whole South and West.

Bearing and throwing strong light upon the vital agency of the railways in this great matter, I quote some lucid and meaty extracts from a powerful letter from Mr. J. W. Carpenter, a sagacious and enterprising capitalist who has been, and is now, connected with large and important projects and railroads in the South.

Says this wise and practical business man:

"You are pressing a line of thought and action, the result of which will put untold millions in the 'treasury stores' of the South. Every man, woman and child in this beautiful country should lend to you and your associates all the material aid possible, and the voice of every citizen should be raised in encouragement of the efforts you are making. Nothing can possibly be done that will show as quick and good results as the success of the great movement you have in hand.

"There is no reason why the merchant, the manufacturer and the farmer of the South should pay tribute to New York in the importation or exportation of her goods. The one great drawback to-day to more rapid development is the excessive freight rates of the railroads. But when this is mentioned one is met with the reply: 'Look at the present status of our railroads, with all of their excessive charges. They are in a deplorable condition.'

"That is exactly true. Management of the various roads do not seem to comprehend the difficulties under which they are laboring. It is right here I am interested in North Georgia in the development of marble interests. The rate of freight from Tate Station to New York is forty-three

cents per 100 pounds by rail, to Philadelphia thirty nine cents, to Baltimore thirty-four cents, to Boston thirty-one cents. These rates are practically prohibition. Where to-day 100 cars of the product of that industry are shipped to these points, a rate by the roads that was in reason would carry out from those marble fields tens of thousands of carloads of that product, as the railroads do to-day from the State of Vermont.

"It is short-sightedness on the part of the management of the railroads not to see this. They owe it to themselves. They owe it to this great, rich country, rich in undeveloped mineral wealth, in timber, in grain, in cotton, in everything, to do everything in their power to foster and aid the success of every enterprise that comes up. In the success of those enterprises lies their success.

"Low rates encourage investments; investments make business; business makes tonnage for the railroads, and where to-day a road may be hauling twenty-five cars of the output of some manufactory at an exorbitant rate, by a proper reduction of that rate they could put the manufacturer of that article in position to go into the market and compete, and thus secure to themselves the hauling of 500 cars instead of twenty-five.

"I have spoken of this because I feel that a great many men connected with railroad management do not fully appreciate the magnitude of the importance in the development of such a movement as you have on hand at this time. They could with perfect security guarantee to any line of steamers such a reduction of freight rates as that line of ships might dictate, and then, by reason of increased business, make a great deal more than by their present policy."

Mr. Carpenter is a successful capitalist who is now deeply interested in a new railway from Brunswick through La Grange and Sheffield to the West, for which Col. J. H. Fannin, now of Atlanta, obtained a charter from the legislature when he was a representative from Troup county.

But the vast benefaction is started in a modest way. Let all interests work to make it successful and perfect and multiply it.

Activity in Kentucky Coal.

Eastern Kentucky coal fields have received considerable impetus in the influx of enormous capital from abroad. The Breckenridge & Pineville Syndicate, Limited, of England, have recently acquired possession by lease, with option to buy, the east and west properties of the Cumberland Valley Colliery Co., about 1,100 acres in all, of the finest deposits in the State of bituminous coal. This is a splendid coking coal and is found in a continuation of the range of the Pocahontas fields. Besides the soft coal, the company has excellent veins of cannel coal which is scarcely inferior to the celebrated Breckenridge cannel, which latter has for years been exported to England exclusively. The Breckenridge Co., Limited, whose mines are in the county of this name on the Ohio river near Cloverport, will operate both companies. Wm. Hopper is agent for the Breckenridge Co., Limited, and trustee of the new syndicate. His office is in the Kentucky National Bank building, and he will supply the gas companies through the West and South with cannel coal for enriching gas. The Pineville cannel analyzes 55.10 per cent. volatile matter, 44.90 per cent. coke, and has only 22.20 per cent. ash in coal. This is commonly called the Pineville "bog head" cannel and is found in large pockets on the company's property. The syndicate is spending a great deal of money on improvements to facilitate mining and shipping, and has unlimited capital to perfectly develop the property.—*Iron Age*.

The Intercoastal Waterway.

By Lewis M. Haupt, Consulting and Maritime Engineer.

II.

The plea for this project as published in the MANUFACTURERS' RECORD* was immediately followed by a request for information as to routes, estimates, commercial statistics and general information, to be used in the Senate of the United States in presenting the bill numbered 3,179, as introduced by Senator M. S. Quay, of Pennsylvania, in case there should be any opposition.

The original bill as formulated by the committee of the New York Board of Trade and Transportation and the Philadelphia Trades' League, requesting the appointment of a mixed commission consisting of a representative of the engineer corps, naval service, coast survey and a commissioner from each of the States of New York, Pennsylvania and New Jersey, having failed in the committees, an amended bill was introduced May 20 omitting this feature and placing the responsibility solely within the jurisdiction of the War Department. To this there was no further opposition by the committee on commerce, and the measure is now in a fair way to become a law, having passed the Senate.

This bill provides for the expenditure of \$25,000, or as much thereof as may be required, to determine "the most suitable and feasible plan for making a ship canal from Philadelphia across New Jersey to New York bay, and to estimate the cost thereof," such survey to be made "at the earliest practicable time." This route was suggested by the writer as being the shortest, most capable of improvement and cheapest, and as the one lying in the direct line of communication between populous centres aggregating over 5,000,000 people. With an abundant water supply and more than half of the distance traversed by broad, navigable rivers, it possesses great natural advantages. But before entering into the details of the engineering features, it is expedient to give a general outline of the entire project, confining the attention particularly to the portion connecting the mouth of the Hudson with that of the Mississippi. The "great belt" waterway includes the interior rivers, lakes and canals whereby the commerce of the States of the basins of the Mississippi, Missouri, Ohio, and lakes and their tributaries are brought to tidewater, while the "intercoastal waterway" is designed to develop and protect the traffic which is now subjected to the risks and delays of a dangerous coast reaching from Florida to Cape Cod, and to furnish in time of war a strategic line of defence which will far exceed in value any sum which may be expended on its construction. There is no physical formation in the world where such an interior line is practicable for so great an extent, or where it would be more useful for commercial or military purposes.

The projects known as the Cape Cod Canal and the existing Delaware & Raritan, forty-four miles long, with its seven feet draft across New Jersey, and the Chesapeake & Delaware, fourteen miles long, with nine feet draft across the Maryland peninsula, are already so well known as to render a further description superfluous. Passing thence nearly 200 miles down Chesapeake bay, with its commerce aggregating over 14,000,000 tons, the route would enter the Elizabeth river at Norfolk and proceed up Southern river through the Albemarle & Chesapeake Canal seventy-three miles to the sound. Of this distance but eighteen miles is covered by the two sections of canal, which has only one lock at the lower end to regulate the tides. It is 220 feet long, forty feet wide

and carries eight feet over the sill. The channel through Currituck sound is six and one-half to seven feet deep, with ordinary winds. This section is also penetrated by the Dismal Swamp Canal, which connects the Elizabeth river, in Virginia, with the Pasquotank, in North Carolina. Albemarle sound is practically a tideless, fresh-water lake with a maximum depth of fifteen feet. Its surface is considerably affected by winds. The changes of level vary from two to four feet. The mean level is about two feet above mean low water of the ocean. The connection between this and Pamlico is made by means of Croatan sound, ten miles long, about three wide, and having a good 9-foot channel. From the southern end of Croatan across Pamlico to Core sound the distance is seventy-five miles. The width of this reach varies from ten to thirty miles and its depth from seven to twenty three feet. Core sound, which connects Pamlico with Beaufort Harbor, N. C., is thirty-six miles long and about three wide. There are six bars in the sound having from four and one-half to five and one-half feet of water over them. The next stretch is through Bogue sound, which extends from Beaufort to New River, a distance of forty-seven miles. The width varies from two to three miles and the depth from two to three feet. Up to this point there is a continuous waterway stretching 244 miles southward from Norfolk, which is perfectly sheltered and landlocked and capable of great improvement at very small cost. The draft in the portion coming within the jurisdiction of the government is much less than in those belonging to private corporations, and hence it limits and retards their proper development.

Continuing westwardly from New River there are five shallow sounds between Bogue sound and Wilmington on the Cape Fear river—these are Stump, Middle, Topsail, Masonborough and Myrtle. They are occupied by an intricate network of channels through which not even a canoe can pass. The tides and storms are gradually filling up the inlets and the sounds are deteriorating through neglect. The neck of land separating Masonborough sound from Cape Fear river is nearly six and one-eighth miles in width, and the highest point of the ridge is sixty-eight feet above tide. A tide lock would be required at the western extremity.

The estimate submitted by Mr. S. T. Abert, United States civil engineer in charge of the survey of this route in 1875 for the portion lying between Pamlico sound and Wilmington, embracing 140 miles, was \$3,685,517 82. This was for a channel forty feet wide at bottom, eight feet deep, with side slopes of two on one, or of the same gauge as the Albemarle Canal. This amounts to only \$26,325 per mile. Of this amount over \$3,000,000 was made up by dredging 10,526,264 cubic yards, which was estimated at thirty and thirty-five cents per yard. To-day with improved machinery it could be taken out for less than half that sum at a profit, so that it would be safe to say that these 140 miles could be opened to the same gauge as that of the Chesapeake & Albemarle Canal for a sum not exceeding \$2,000,000, or only \$14,300 per mile, thus furnishing the cheapest kind of transportation at a very small outlay of capital.

PAGE COUNTY, VA., has furnished many interesting relics of old Indian life, and the recent discovery there of earth mounds and cavins by the bureau of ethnology of the Smithsonian Institution is of particular interest. In these mounds were many human bones, some of them burned, testifying both that they were burial places of the dead and that cremation was practiced.

*For much data in this paper see report by S. T. Abert, Ex. Doc. 35, S., Forty-fourth Congress, first session.

Phosphate and Fertilizer Industries at Charleston.

The British Consul at Charleston, S. C., Mr. St. John, has submitted to his government a very full and complete report on the trade and commerce of Charleston and district for 1891, in which appears the following interesting reference to the phosphate and fertilizer industries:

The many advantages possessed by Charleston as a centre for the manufacture of commercial fertilizers having phosphate rock as a basis have not been overlooked by capitalists, who have shown by their investments during the past ten years how fully they have appreciated them. The situation of this place secures to the manufacturer excellent railway connections, good water transportation facilities and close proximity to the raw material; advantages not enjoyed in an equal degree by any of the other South Atlantic ports on the coast.

During the past year five new fertilizer companies have been organized in this State, and their product is now added to the total output for the year. The names of these new companies are the Chicora, Royal, Imperial, Piedmont and Georgia Chemical; the first two, the Chicora and Royal, have immense fertilizer factories, and both have been fortunate enough to secure very favorable sites for their works. The comparative progress in the fertilizer business here is shown by the fact that in 1880 there were 190,760 tons of crude phosphate rock mined, and 80,000 tons of fertilizers manufactured, while in 1891 the number of tons of rock mined were 572,949, and fertilizers made, 287,975 tons.

Notwithstanding the increased competition, the profits of the business have so far paid a handsome rate of interest on the investments made, and Charleston capitalists, during the past year, have added to these investments more than a million dollars. Mills which were running in 1890, with a capacity of 20,000 tons to 30,000 tons per annum, were enlarged in 1891, and new mills were built with capacities of 50,000 tons to 75,000 tons yearly, one mill even claiming a capacity of 100,000 tons. The last four mills built are model establishments, combining all the latest improvements in mill construction, acid chambers, wharves, store rooms, etc. A number of mills are equipped this year with the necessary appliances for making sulphuric acid from pyrites instead of brimstone, it having been found that at present prices acid can be made from pyrites at a saving of 50 to 60 per cent.

After the close of the shipping season in the spring of 1891 the companies were all busy during the summer months in putting their machinery in first-class condition, making general repairs and adding improvements to their works. At the opening of the new season on September 1, the mills were all ready and prepared for turning out the largest product known in the history of Charleston, but the disastrous decline in the cotton market, however, towards the close of the year 1891, naturally had a very unfavorable effect upon the fertilizer business.

The season of 1890-91 was perhaps the most satisfactory one ever enjoyed by the phosphate rock trade here. Prices were remunerative throughout the year ending August 31, 1891, and the demand was good, affording satisfactory returns for shipments and home deliveries. The land miners had an exceptionally good opportunity for a profitable output this season, owing to the litigation between the State government and the Coosaw Mining Co., which reduced the yield from river mining for the season about 80,000 tons. Upon the whole, however, the year was one of great activity with advanced prices, and a marked absence of those fluctuations which have attended the trade for some time past.

The principal obstacle checking the steady output of phosphate rock was the scarcity of labor. The negro, who is the best and most reliable laborer for phosphate mining in this climate, has had other fields opened to him where he could exchange his labor for money with more profit to himself.

The new fertilizer companies and the increased railway construction throughout the State have absorbed many hands, thus sensibly decreasing the supply of labor for the phosphate mines. Several of the companies endeavored, with more or less success, to supply the deficiency of negro labor by Italians, brought here under contract from New York, and two companies, the Horse Shoe and Bolton Mines, at the close of the year were using land dredges as a substitute for the negro.

South Carolina crude phosphate rock continues to maintain its leading position in the markets of the world as a standard article, reliable and uniform both in quality and analysis, and containing so little deleterious matter that it is generally regarded as chemically perfect. The superior quality of the Carolina rock has been most clearly shown by its ability to hold its own for the last two years, notwithstanding the increasing competition of the Florida companies.

During this time many millions of dollars have been invested in Florida enterprises. Several large, well situated and well equipped companies are now mining rock in that State, and many smaller companies are preparing to go into the business. Still the output of Florida rock up to the present time has by no means been commensurate with the capital now invested there in mining operations. The best expert opinions on the subject regard the output thus far of Florida rock as not more than 25 per cent. of what it should be under existing circumstances. Nevertheless, the Carolina miners recognize the fact that Florida contains some excellent phosphate deposits, and it is very evident that after the business there has passed through the speculative fever period, these deposits will be successfully mined, used and exported. But the Florida miners cannot hope to attain success except by complying with those inevitable conditions and natural laws which environ and control the business elsewhere. They must learn, as the Carolina miners did before them, that successful phosphate mining requires time, labor, patience, knowledge and money. It must also be remembered that after the rock is mined it is a bulky article, and ample facilities must be provided for moving it to market, and that the more cheaply this is done the greater must be the profit.

When all of these conditions are made favorable, as they doubtless will be in course of time, Florida will most likely come to the front, and possibly be a serious competitor with the Carolina mining industries. Once Florida has learned the necessary lessons in order to make her a successful miner of phosphate rock, it is perhaps only natural to suppose that she will become a manufacturer of fertilizers, when she will compete with the Carolina manufacturers as well as the miners. But the fertilizer business is a growing industry in a growing country, and although temporarily depressed at the end of 1891, it may be only fair to assume that when Florida's phosphate industries are fully developed and the time has come for her to make fertilizers as well as mine rock, that the increased supply of manufactured fertilizers brought into the market will be met by an increased demand.

For the present, however, the Charleston manufacturers use about 200,000 tons of crude rock a year, but they have not so far been able to use Florida low-grade rock, as it cannot compete with the Carolina article; neither could they use the Florida 80 per cent. to 85 per cent. high-grade rock, as it is too high price.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department, on pages 37 and 38.]

Adaptability of Southern Labor to Bleachery Work.

By Herbert G. McKevrow.

Naturally, the points most concerning and interesting Southern manufacturers in the development of bleaching and finishing interests in their midst are the degree to which they might be benefited by having a more intimate and personal oversight over the conditions through which their manufactured goods have to pass after leaving their immediate care, and the relative probable cost to them of these operations as compared with the same matter under the existing regime.

The quantity of cotton goods referred to in a former article as being the daily product of Southern mills which meets with subsequent treatments is largely sent to bleacheries and finishing works in Massachusetts and Rhode Island, being received by these firms as consigned to them by the cotton mills to be bleached and finished, and subsequently to be passed on to the selected means of distribution to the market. In this way the goods, after being baled at the Southern manufactories, do not again, in the majority of cases, come under the inspection of the manufacturer, but being finally prepared and cased for the market, are transmitted direct to the various salesmen and commission houses in Boston, New York, Philadelphia and Baltimore. This is undoubtedly applicable also to the goods consigned by Northern and Eastern manufacturing interests to bleacheries and finishing works; but it would appear that the Southern manufacturer is experiencing in this a disadvantage, owing to his great distance from these establishments, that is not proportionate to his position and the conditions to which he has to subserve on the general market.

The bleaching and finishing are matters that are undertaken for the cotton mills and not for the commission agents, a report and a bill being rendered to the former. It is in the process of finishing that all defects and imperfections show themselves with the greatest distinctness; whether defects in the yarn, in the sizing, or in the weave, it is at this point they are commonly detected. At the same time, also, in the strictly chemical operations of starching and bleaching there are numberless opportunities presented for defects to appear, the cause of which may sometimes be difficult to determine and locate; results which may perhaps have transpired through external impurities almost unobservable on the face of the gray cloth, becoming chemically transformed by the action of alkalis or acids, and exhibiting in the white goods unsightly and insoluble stains. To place the responsibility for these very common occurrences is often a matter of great difficulty, and not infrequently leads to considerable animus between the respective agents or managers of the manufactories and the bleacheries, each of whom is naturally and praiseworthy anxious to place the responsibility and loss on some account other than his own. Machine oil and iron rust are as frequent in one place as in another, and the results are appreciably fatal wherever they may have their origin. These are not by any means matters to be passed over carelessly, as most managers of mill property who have had any measure of experience in these matters know; and it would appear that Southern manufacturers removed by great distances from these necessary adjunctory processes now render themselves unusually responsible for results over the achieving of which they have no control

and over the finality of which they have no power of rejection or repudiation.

In the phase of the matter having reference to the comparative cost of bleaching in the South as contrasted with similar operations in the North many points present themselves for attention, and there would indubitably be found some formidable difficulties attending the birth and growth of so entirely new an industry as this on a scale sufficiently comprehensive as to be of estimable commercial value to the South generally.

The point which ought to excite the most apprehension is that relating to the supply of adequately equipped and trained labor for the various branches, a matter which has so large and important a bearing on the ultimate cost of any enterprise. In the bleach-house itself, supposing it to be in the charge of a competent and experienced bleacher—one who knows how to obtain and retain his solutions at the necessary hydrometric strength, who is familiar with the varying lengths of time for the different grades of goods he must keep his kiers under steam, and who can, at the same time, keep a watchful eye upon his washing, sour and chemic machines and his white and chemic bins—this necessity for experienced labor is not so much to be felt. The use of boys in the European bleach-houses is very general, and is fast becoming the rule also in establishments in the Eastern States; in the South colored help might be advantageously employed in this place, and as the duties are of so purely a subordinate nature, this would no doubt be successful. As progress is made, however, through the succeeding operations of starching, drying, tentering, calendering, folding and making up, a somewhat different state of affairs is encountered. In starching and calendering particularly it is necessary that the labor should be skilled. No novice can be expected to undertake duties the slightest mistake in the fulfillment of which may not improbably lead to extensive and many times irremediable damage and loss. A careful survey of Southern labor conditions, of the capacity for the absorption of instruction possessed by the average individual in the ranks of mill workers, and his degree of adaptability to changed requirements and new occupations, has forced the writer to the conclusion that in very few of the manufacturing districts of the South will it be found possible to train native workmen to the uses of bleacheries and finishing works. It would appear that in the event of these enterprises being successfully introduced in other respects, dependence upon outside labor, from the East and from Europe, will be the rule, not merely in the incipience of the matter, but most probably in the majority of Southern sections at all times. Be it remembered that the operations mentioned above require not merely, after sufficient training, the ability to run any particular machine, but a constant, diligent and alert attention to every foot of cloth that passes in operation (passes, too, at the rate of from seventy to 200 yards per minute); a quick, unhesitating power of judgment, and, finally, a certain degree of individual resource in matters of doubt and difficulty. These qualifications the average Southern mill-worker does not seem to possess. He appears to be, generally speaking, himself a collection of cranks and levers set in motion and stopped by the foreman of the room. His natural tendencies are distinctly languorous, and there seems to be an extraordinary reluctance to arrive at anything like a personal decision on any question. At the best his determination is simply an affirmative section of a collective decision arrived at by as many people as he can constrain to offer an opinion, and he would infinitely prefer to stop his machine, if matters went wrong, and wait for the responsible instruction of the section hand or the foreman.

There is a degree of inaptitude, of indifference and of vacillating laziness in the native lower class Southerner that does not commend him for use in those industries where unremitting diligence and quick, unhesitating personal judgment are demanded. In the discussion, therefore, of these parts of the question involving the cost of these operations, it will be as well to bear in mind the necessity of employing labor from other districts of the country, and of placing them among atmospheric and physical conditions with which they are not familiar. This is not, however, an insuperable difficulty; it is one that has been successfully surmounted in other branches of industrial manufacture more than once, and there is little doubt that a conscientious and earnest appreciation of the situation; a wish, taking practical and energetic shape on the part of Southern manufacturers to induce the growth of these valuable industries in their territory, will obviate successfully more formidable difficulties than the above. The next point of interest is the consideration of the actual saving in dollars and cents under the most favorable conditions to the Southern manufacturer by having within easy reach establishments for the final treatment of his goods, but this must be reserved for future discussion.

Cotton Manufacturing in Memphis.

[An address to the Young Men's Business League, of Memphis, Tenn., by F. P. Toof, general manager of the Bluff City Cotton Mills, Memphis.]

The question of cotton manufacturing in the South may be truly said to be in its infancy as compared to what it will one day in the future reach. Fifteen years ago such eminent men as Edward Atkinson, of Boston, said, not only privately but publicly, that the South could never attain any distinction in the manufacture of cotton goods, and that its efforts would be necessarily confined to the coarser fabrics.

Since that time manufacture of cotton goods has steadily progressed in the South and practically controls the situation on all coarser fabrics, and is now turning its attention to the finer fabrics, and in direct competition with the New England mills, until we have become recognized as a factor at least in the cotton manufacturing world. The Eastern spinners have practically abandoned most of the coarser fabrics to the South, and the South is reaching out to take hold of the finer fabrics, and with success.

The mills here in Memphis are distinguished by the fact that they are scheduled to-day on a finer fabric and on finer numbers of yarn than yet ever attempted by Southern cotton mills, its maximum being No. 40 yarns and its average being No. 26, or, to speak more intelligently, it is manufacturing yarns or spinning cotton into thread that requires 33,600 yards to make a pound. It is doing this successfully, as is evidenced by the fact that our product is in demand in the markets of Boston, Providence, New York and Philadelphia, where this class of product is consumed, and bringing the top market price. This is remarkable from the fact that ten years ago it was unthought of, and the Eastern consumers would not have purchased them, believing it impossible to make a merchantable yarn of these numbers in the Southern States. Yet we are doing this and they are anxious to buy the stuff.

Again, it points to the opportunities of the South. The old cry that these numbers could not be manufactured South, and that they would always have to be made near the sea coast, is an exploded theory. And there is no limit to what we can manufacture South in the line of cotton goods with intelligence in construction and equipment of our plants, and last, but

not least, sufficient capital to manage the affairs economically.

With these facts before us, what part will Memphis and Memphis capital take in the development of this great industry? What are the advantages that surround us to develop the great future of cotton manufacture?

1. We have the advantage of raw material of such grades that we can manufacture any product made from cotton.

2. By virtue of our railroads and the Mississippi river, we have cheap transportation to reach every point of the compass, and especially the millions that populate the great Mississippi and Missouri valley, all consumers.

3. As steam is the motive power greatest in use to-day, we can get fuel as cheaply here as anywhere. When I say to you that it is not impossible to develop power by the use of steam in the city of Memphis at a cost of not exceeding three cents per horse-power per day of ten hours, I am giving you cold facts, when construction and appliances are used to obtain economy. And it can be shown beyond the shadow of a doubt that a 500 horse-power plant, as indicated, can be maintained to produce this result at a cost of \$15 per day of ten hours for fuel. This fact the league should advertise to the manufacturing world, when steam users in other cities of Tennessee and the South are paying from \$30 to \$50 per diem for the same indicated horse power, or pro rata.

Hence we have advantages equal to the best in the development of the cotton industry, and should see to it that Memphis shall duly advertise these facts, and the next ten years of our progress will be beyond our most sanguine expectations. With a cotton centre moving 750,000 bales annually, what does it mean to the rest of the world? It means the busy hum of not less than 6,000,000 spindles or numbers of that average and 200,000 looms, giving employment to not less than 75,000 hands, and representing a capital invested of quite \$150,000,000.

This is what the cotton means that leaves Memphis each year. Its original value here is about \$30,000,000. Any part of this cotton manufactured at home is adding that much more capital to Memphis, and by distributing its product beyond our doors, is making the outside world pay tribute to us by the fact of our manufactures, as we here are paying tribute to the East, to her manufacturing centre, and the greater part of the world paying tribute to England by the genius of her manufacturers.

This is only citing one instance of our inheritance; let those interested in other pursuits show what they can do. I believe that cotton manufacture in Memphis, by the very nature of its location, can become the chief cotton manufacturing centre of the United States. If the population of a country is necessarily its consumers, and the fact that Memphis occupies its position, by being centrally located, to supply this great population, and being blest with shipping facilities in every direction, and those facilities are to be maintained by virtue of the Mississippi river, what on earth can prevent her greatness as a cotton manufacturing centre if the people arouse themselves to the realization of its importance?

We have, as you know, only one enterprise of this kind in our city, namely, the Bluff City Cotton Mills, with which I have the honor to be identified as its manager. We have arrived at a period of success. We wish to be more successful, and invite others to join our enterprise and make it of eminent distinction in the class of Southern institutions. Believing this fact alone will bring millions of capital to us for the development of this industry in our midst, we ask you through your association to investigate our affairs and take

an interest with us in the triumphant success in the manufacture of cotton goods in Memphis.

We propose to give you value received in all particulars, and trust to see the day in the near future when cotton-mill stocks will be sought after with the same degree of confidence as is bank stocks. We invite an investigation.

Condition of the Cotton Crop.

The July crop report of the statistician of the Department of Agriculture gives an average condition of 86.9 for the whole cotton belt. The June return was 85.9. The plant is late, the stand somewhat imperfect and cultivation not up to the usual standard. Improvement was manifested during June in the Atlantic and in the western Gulf States, but there was a further decline in the eastern Gulf States. The June and July averages for this year, together with the July returns of 1890 and 1891, are presented for the purpose of comparison:

States.	1892.		1891.	1890.
	July.	June.		
Virginia.....	85	79	82	92
North Carolina.....	91	88	77	95
South Carolina.....	94	91	80	95
Georgia.....	83	87	85	95
Florida.....	85	89	94	91
Alabama.....	90	91	87	95
Mississippi.....	85	91	91	89
Louisiana.....	84	82	90	86
Texas.....	87	81	95	89
Arkansas.....	77	75	93	89
Tennessee.....	87	90	82	93
Average.....	86.9	85.9	88.6	91.4

A Cotton Compress Combine.

The attempted consolidation of New Orleans cotton presses into a single company, the particulars of which were given in these columns several weeks ago, came to naught finally, but report now comes from New Orleans of an understanding that has been reached by the compress owners by which uniform charges will be established. The scale reported as being agreed upon fixes the storage rate at thirty-five cents for the first sixty days and ten cents for each additional month. Heretofore the charges for storage have been from twenty-five to thirty-five cents per bale, which the press owners say cannot pay expenses.

For what is known as small numbered cotton the charges hereafter will be thirty cents for the first sixty days and ten cents for the succeeding months. In the past this charge has been twenty-five cents for the first sixty days and ten cents for the following months.

The cotton handlers, it seems, have decided to charge two cents a bale more, and for this reason the cotton press owners will charge more storage in order to maintain at least some percentage of profit.

What has been regarded as an incident of the combination is the sale of Kentucky Press last week by Boyd & Herrick to Lehman, Stern & Co. for \$90,000.

A New Cotton Mill for Columbia.

Efforts are now being made to build a cotton mill at Columbia, S. C. It is proposed to organize a stock company with \$1,000,000 capital, divided into 10,000 shares of the par value of \$100 each, for the purpose of entering into the manufacture of cotton duck. A mill of 30,000 spindles will be built, with provision to enlarge to 50,000 spindles as soon as desirable. The mill will be built under the personal supervision of Messrs. Lockwood, Greene & Co., of Boston, Mass., who have an extensive and successful experience in building Southern cotton mills. It will be built in the most improved and modern manner. The machinery will be new in every detail and of the latest pattern. The location is one of the most favorable in the South, being immediately in the vicinity of the cotton fields, besides having

the canal belonging to the Columbia Water Power Co. to furnish at low cost the necessary power without the large expense and outlay of capital required to develop water-power. Hon. Aretas Blood, of Manchester, N. H., one of New England's successful business men, will be president of the company, and Mr. Charles K. Oliver, recently treasurer and manager of the Druid Mills Co., of Baltimore, Md., will be treasurer and general manager. Mr. Oliver has been engaged in the manufacture of cotton duck for more than twenty years, with a thorough knowledge covering all details. Columbia itself is well situated for the business. The canal from which power will be obtained has a developed capacity of 14,000 horse-power. It connects by means of locks with navigable water, and cotton can be brought from the up country and landed at the mill door, as well as provided by the local market and adjacent fields. The mill will probably give employment to 600 hands.—*Wool and Cotton Reporter*.

Figuring the Product of a Loom.

A correspondent of the *Boston Journal of Commerce* suggests the following as a short and simple rule for figuring out the product of a loom: When I want to know how many yards a loom could do running sixty hours without a stop. I use a very simple rule which I discovered years ago. I always set two ciphers to the right of the number of picks the looms run per minute and divide that figure by the picks the goods contain per inch; the quotient is always and invariably correct—the number of yards the loom would produce if run sixty hours without a stop. If, for example, my looms run 193 picks per minute, and the goods have sixty-four picks per inch, set down $19,300 \div 64 = 301\frac{1}{2}$ yards per sixty hours. The proof I request the reader to figure out his own way, and also invite him to try this rule with any speed and picked goods and prove it his own way of figuring in order to convince him. This rule, remarkably simple and of good assistance to the mill man, will probably arouse the reader's curiosity and throw the questions upon his mind, how is that hinged? How can that always be correct in any case of speed and picked goods? The answer is as remarkably simple as the rule itself. Since the speed of the loom multiplied by sixty minutes per hour, and by sixty hours per week, gives the total number of picks the loom can do in sixty hours, divide this by the thirty-six inches in a yard (which is the general way of figuring), you will observe that the answer is always the rule given above, viz., the speed of loom, with two ciphers at the right.

Example: A loom running 193 picks per minute multiplied by sixty minutes in an hour and sixty hours in a week equal the number of picks the loom would do in sixty hours without stop; then divide by thirty-six inches in a yard, thus: $193 \times 60 \times 60 = 694,800$ picks $\div 36 = 19,300$. Now if this is divided again by the number of picks in an inch you will get the number of yards your loom would produce if run sixty hours without stop.

Southern Textile Notes.

THE Louisville (Ky.) Cotton Mills Co., manufacturers of cotton warps, is preparing to make a number of changes in its mill, preparatory to entering into the manufacture of hosiery yarn of combed and carded cotton. The company is also considering the advisability of extending the plant, but to what extent has not yet been decided upon. The present main building of the mill is a three-story structure 300 by 90 feet, and there is a plot of ground adjoining available as a site for another mill of the same dimensions. The manufac-

ture of hosiery yarn will probably take the place to an extent of the present manufactures. The mill is now running 11,000 Sherman spindles on an extra quality yarn for jeans, of which the mill has made a specialty, and also makes fast colored fancy warps of all descriptions. The officers of the mill are S. H. Shallcross, president; J. B. Speed, vice-president; L. H. A. Schwartz, manager, and Philip S. Tuley, secretary and treasurer. The company is capitalized at \$300,000, and its product reaches a value of between \$350,000 and \$400,000 a year. The numbers of yarn manufactured run from 8 to 24s.

JAMES A. ARMSTRONG & Co., owners of the Charlottesville (Va.) Knitting Mills, are considering the advisability of putting in machinery to do their own carding and spinning. Heretofore they have purchased the yarns used. The company makes a specialty of children's white cotton underwear, and sells its product through New York houses. The mill contains six sets knitting machines and fifty sewing machines. It has a capacity of 180 dozen per day and is running full time.

THE Newberry (S. C.) Cotton Mills lately shut down for a few days for repairs to the engine. This plant produces sheetings and shirtings, and, with the exception of a half day for repairs, has been running since it started in 1885.

THE cotton-weaving mill of Albert Snafe & Bro. at Moundsville, W. Va., is about completed and the machinery is now being placed in position. The mill building is 36x160 feet in size. Active manufacturing of cotton goods is expected to commence about September 1.

THE Tombigbee Cotton Mills, of Columbus, Miss., manufacturers of four and one-half to five yards sheeting, shirtings, drills, osnaburgs and rope, have recently added eighteen looms and three spinning frames to its equipment. The officers of this company are H. Johnston, president; W. C. Richards, vice-president, and W. Johnston, secretary and treasurer. The mill superintendent is George C. Barnes.

It is reported that the Trion Manufacturing Co., of Trion Factory, Ga., will expend about \$500,000 in improving and enlarging its cotton mill, putting in additional machinery, etc.

A MOVEMENT looking to the erection of another \$100,000 cotton mill in Fayetteville, N. C., is on foot in that city.

THE Pioneer Worsted Co., of Louisville, Ky., has placed orders for new machinery that will about double the capacity of the plant. The mill produces worsted yarn of numbers from 10s to 40s, and last year on 3,500 spindles produced 427,000 pounds of manufactured product. With the new machinery the capacity will be increased to 7,000 spindles. Treasurer Walker Richardson, who has been in active charge of the mill for some time past, says that the company has in mind the adding of weaving machinery.

THE Rosedale Manufacturing Co., of Rock Mills, Ala., manufacturer of carpet warps, has lately put new clothing on the cards in its mills and will soon add speeders and spinning machinery and a new engine and boiler. It is now running 4,000 spindles.

THE erection of a cotton mill at Greenville, Miss., is talked of. Several of the city's leading business men have been thoroughly investigating the matter, and will endeavor to organize a company.

THE Charlottesville Woolen Mills, of Charlottesville, Va., famous for cadet grays and sky blues, are about to add five more Knowles looms to their equipment, making thirty in all. They run 2,100 spindles, and will probably increase the number at the same time. The mill, of which H. C. Marchant is president; C. A. Furbush, of Philadelphia, vice-president, and Judge

John L. Cochran, treasurer, employs 120 hands. Their product is sold direct to the trade, except in New York, New Jersey and New England, and this year will reach a value of \$250,000, an increase of \$20,000 over last year. The company for the last three years has paid an annual dividend of 7 per cent. It is capitalized at \$250,000.—*Textile Record*.

MESSRS. A. N. WOOD, J. A. Carroll, H. D. Wheat and several others of Gaffney, S. C., have obtained a charter for the Gaffney Manufacturing Co. Their intention is to erect a \$100,000 cotton factory, and the books of subscription are now open. Mr. Wheat is to be treasurer and manager of the new concern.

A LARGE government order for hose has been engaging the attention of the Alden Knitting Mill, of New Orleans, La. The plant has been enlarged lately to a considerable extent.

THE Carrollton (Ky.) Woolen Mills intends to introduce a new product in its plant. Heretofore it has been running on Kentucky jeans and doeskins, but new finishing machinery is being added to manufacture fancy cassimeres. The mill runs four sets of cards, seventy-four looms and 1,224 spindles. John J. Howe is the company's president, and W. Howe, secretary and agent.

A NEW cotton yarn spinning mill which is to be erected at Charlotte, N. C., will be equipped with all the latest improved machinery and have a capacity of 10,000 spindles. Fine yarns only will be made, from 30s to 60s, both single and double. This plant is expected to commence operations about January next. Among those interested in the new concern are D. A. Tompkins, of Charlotte; Thos. J. Hill, of Providence, R. I.; Messrs. Potter & Atherton, of Lowell, Mass., and others. The plant will be operated under the title of the Atherton Mills, to which concern a charter has just been granted. On August 18 the first meeting of the stockholders will be held for the purpose of organizing and electing officers. The capital stock is \$100,000, with privilege of increasing to \$200,000.

MR. A. G. ROWE, of Nelson county, Ky., has decided to erect in Bowling Green what will be the first hosiery mill in Kentucky. Site for the factory will be located and the work of erection commenced at once. Ten knitting machines of the latest improved make have been ordered from the Frantz & Pope Knitting Machine Co., of Bucyrus, Ohio. Mr. Rowe expects to have the plant in operation by September 15th.

MR. B. F. GAMBRILL, of Baltimore, Md., is now at Wheeling, W. Va., in the interest of a company which he proposes to organize for the purpose of erecting a cotton factory in the latter city. The plant contemplated is one of 10,000 spindles, with a capital of \$200,000 or \$300,000, for the manufacture of yarns and light ducking.

THE Chester (S. C.) Manufacturing Co. held its annual meeting on July 13th and elected the following directors: Joseph Wiley, J. H. Smith, S. M. Jones, Paul Hemphill, W. H. Harden, G. D. Heath, J. W. Dunovant, W. S. Gregg and G. W. Gage. The directors elected Mr. Dunovant, president, and S. B. Latham, secretary and treasurer. The affairs of the company are in good condition. Its new building is completed, and a number of looms have been put in and started.

THE dynamite cruiser Vesuvius ran aground on Sunken Meadows, off Astoria, East river. As the tide was ebbing it was left hard and fast, but at the next high tide was drawn off by a navy-yard tug. The reason given for the accident was that such a heavy fog was prevailing that the vessel missed her course. No damage was done.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on pages 38 and 39.]

The Position of Richmond Terminal.

OFFICE OF MANUFACTURERS' RECORD,
No. 126 Liberty Street,
NEW YORK, July 20.

Richmond Terminal continues to act not only as a drag on the market—providing, of course, that a stock whose ticker-mark is approaching closely to zero can be said to have any influence on other values—but it is also having a deterrent effect at this point on commercial enterprises the scope of which is within the lines of the company's system. Not only is this true as stated, but it is true as well that the Richmond Terminal's magnificent failure has created a halting tendency on the part of investors and capitalists generally whose aid is sought in the development of natural resources in those sections of territory contiguous to, but not necessarily a part of the territory traversed by the company's 9,000 miles of track. In short, the now absolute bankruptcy of one of the greatest railway systems in the country—great in the matter of mileage—has injuriously affected not alone its own contributing field, but has tended to partially demoralize the status of the territory lying beyond it.

When the late Cyrus W. Field was eulched out of his holdings of Manhattan Elevated stock, Jay Gould sent him a message to the effect that he would permit him to retain his real estate and would not ask him to mortgage it, so that he might be able to pay up any little differences. It is evident, however, that this commiseration for the defeated was not in the line of policy pursued by any one of the successive Richmond Terminal managements from the very time when the system was organized as such. In the first place, the now parent company undertook what was beyond its power of accomplishment; to use a Southern euphemism, it bit off more than it could chew. Interest obligations were assumed when the railway property upon which these obligations were originally vested were utterly incapable of providing for their payment. Property was leased and a guarantee of payment provided when it was an open secret that its earnings could not meet its fixed charges, and, in a number of cases, where the property in question was absolutely unnecessary to the completeness of the system or to the fulfillment of any legitimate purpose for which the system was organized. There seems to have been an effort on the part of the originators to provide material for an especially brilliant collapse, and, in the light of recent developments, the success attending their endeavor is recorded in the failures of those that took stock in their promises. It can be seen now at a glance that the bonded and junior indebtedness of the Richmond Terminal is heavily in excess of its earning power. This was known to the financial fathers of the system, yet they succeeded in concealing the fact until others were tempted to assume the burden, and these, in turn, handed down the shop-worn goods until they became the property of a reorganization committee that has until now completely failed of its purpose.

S. M. Mills, ex-commodore of the Wall-street navy, remarked the other day that the Olcott committee was conceived in hope, born in faith, permitted to live by charity, and was finally killed by Drexel Morgan & Co. He might have added that the killing was avenged by W. P. Clyde. There are others in Wall street, and they are not those who are generally classed as pessimists, who profess to see in the carried out programme of the Olcott committee an attempt to exercise a greater

care over certain interests in Wall street than over those of the company itself, or of those who were carrying any of its several lines of securities. They point out that the forthcoming reorganization scheme was heralded as providing a certain means of salvation; that the friends of the scheme, posing for the time as the friends of the company and its security holders, prophesied an inevitably favorable outcome and a resulting advance in prices; that when the committee's personnel was first announced the stock was selling in the neighborhood of twelve, and that it subsequently advanced to sixteen and above; that within a week after the plan was published the price dropped below the point first quoted, and that even its present ridiculous figure induces few purchasers, while the offers far exceed the bids in number. It is not intimated that any one within the knowledge or the control of the committee used the committee's secrets as a lever for boosting prices and then for depressing them, nor is it claimed that the failure of certain heavy stock and security holders to deposit their certificates with the Central Trust Co. is any indication of a purpose to aid those who would rather see the several prices go down than up, but attention has been called in a quiet way to the fact that a number of depressing causes were coincident and that the financial doctors of a sick system had united in administering a cathartic when a tonic was what was needed, and, again, to the fact that the collapse of the company's fiscal affairs was not attended by any serious or simultaneous breaking up among those who had managed either the road itself or had engineered the attempts to infuse fresh *aurum potable* into its system.

So far as reorganization goes, matters are now at a standstill, and it is doubtful if any thing will be done until September, unless, indeed, an effort is made for the appointment of a receiver. Mr. Clyde will not yield his position taken in opposition to the Drexel Morgan practical control of the finances, and the house in question will not assume the responsibility unless all objections from the inside are removed. Mr. Clyde says he will not buy a pig in a poke, and J. Pierpont Morgan replies that he will not take charge of a family of kickers. So the matter stands, and is likely to stand until the courts intervene and take possession.

Receivership for the Memphis & Charleston.

Another link of the Richmond Terminal has been placed in a receiver's hands. The Memphis & Charleston Railroad Co., operating 330 miles of railroad, has, on the application of Samuel Thomas, of New York, who holds liabilities against the road to the extent of \$123,000 floating debt and \$70,000 past due coupons, been turned over to Henry Fink as receiver. The Memphis & Charleston was chartered in 1846 and opened in 1858. In 1877 it was leased to the East Tennessee, Virginia & Georgia for a period of twenty years, and in 1887 was formally transferred to that company, which controls through the ownership of a majority of the stock. The outstanding bonds of the company are given as follows: \$1,260,000 first mortgage 75, due 1915; \$1,000,000 second mortgage 75, due 1915; \$2,264,000 consolidated 75, due 1915, and \$1,000,000 general mortgage 65, due 1924. The capital stock is \$5,312,712. The necessity for a receivership is stated to have arisen from a falling off of \$175,000 in net earnings for the past fiscal year from the net earnings of the previous year, with \$80,000 paid out for a drawbridge at Florence, Ala., which the government compelled the road to build, and other unusual expenses rendered it impossible to meet interest on the bonds. The minority stockholders contended in

the suit for a receiver who was not identified with the East Tennessee, whose domination they averred would be antagonistic to the interest of the company. They were, however, unsuccessful, as Mr. Fink, the receiver, is a vice-president of the East Tennessee, also one of its receivers, and his name was submitted by that company.

Lease of the South Bound Railroad.

The consummation of an important deal affecting the Florida and East Georgia lines is announced. The South Bound Railroad, which is built from Columbia, S. C., to Savannah, Ga., passes under the control of the Florida Central & Peninsular Railroad Co. on terms said to be advantageous to the latter's security holders. A connecting link will be built from Savannah to either Callahan, Hart's Road or Jacksonville, Fla., and is expected to be in operation within a year, preliminaries being already under way. This arrangement gives the Florida Central and the Jacksonville, Tampa & Key West roads a Northern outlet, reaching Savannah by the new road to be built, running from Savannah to Columbia via the South Bound, and connecting through the Charlotte, Columbia & Augusta with other links of the Richmond & Danville system for Washington and the North. The new route from Savannah to Florida will probably touch a number of coast towns, striking the Brunswick, Darien & St. Mary's Railroad and developing a healthy and productive portion of the State. It will partly parallel the Savannah, Florida & Western, but, it is claimed, will be forty miles shorter than that road, which deflects to reach Way Cross.

The Decatur, Chesapeake & New Orleans.

A conference was recently held at Shelbyville, Tenn., of persons chiefly interested in the Decatur, Chesapeake & New Orleans Railroad, with a view of reaching some agreement by which the road may be completed. A compromise plan was submitted and proved satisfactory to a large majority of the Southern creditors who were present, and will be presented to the New York bondholders for approval. Its principal feature is the issuance of preferred stock to the amount of \$300,000 for part of the indebtedness, the balance to be settled in second mortgage bonds. The road is projected from Gallatin, Tenn., to Aberdeen, Miss., a distance of 250 miles, and completed from Booneville, Tenn., to Alabama and Tennessee State line, thirty-four miles. The property is now in the courts, but indications point to an early reorganization.

Bright Prospects for the S., A. & M.

The increased earnings of the Savannah, Americus & Montgomery evidence the good effects of the opening of that road to Montgomery, Ala. The earnings for June will foot up more than \$45,000, which is some \$9,000 in excess of last year and \$5,000 more than the preceding month. The company is now perfecting its terminals at Montgomery and arranging connections with other systems, from which good results may be expected.

This line is about entering its busy season, and when the movement of the cotton crop is well under way its resources will be taxed to handle the business.

The resumption of traffic arrangements with the Central has dispelled all talk of the extension to Savannah, and evidently the idea is either given up or slumbering quietly until a more propitious season.

At the stockholders' meeting lately held in Americus the old officers were re-elected, as follows: S. H. Hawkins, president; S. W. Coney, vice-president; W.

E. Hawkins, second vice-president, and S. C. Cooper, treasurer. From the officers' reports it is learned that on the part of the line in operation enough was made to pay the interest on the bonds and lay aside something towards surplus.

R. & D. Floating Debt Extended.

The conference committee of the Richmond Terminal has arranged with holders of the obligations of the Richmond & Danville to extend the floating debt of that company, amounting to about \$4,400,000, for two years at the option of the company. This arrangement will give ample time for carrying out any plan of reorganization, and the Richmond Terminal advisory committee has requested the conference committee to continue working on its present lines. The improvement in the Terminal situation, according to Chairman Stone, has been so marked that the various plans of reorganization suggested will be only temporarily held in abeyance.

Southern Railway Association.

Things have an ominous outlook for the Southern Railway and Steamship Association, and a disintegration is not an unexpected event. The recent meeting in New York was not entirely harmonious, and the iron-clad agreement which was perfected received the endorsement of only twenty-two lines, among which were the Louisville & Nashville, the Mobile & Ohio, the Illinois Central, the Seaboard Air Line, the Atlantic Coast Line, the Savannah, Florida & Western and the Nashville & Chattanooga. It is thought that the Georgia Central, the Richmond & Danville and the East Tennessee, Virginia & Georgia will also sign as soon as the receivers can be communicated with. The non-signers are the Cincinnati, New Orleans & Texas Pacific and the Alabama & Great Southern, which are controlled by the East Tennessee system; the Newport News & Mississippi Valley and the Louisville, New Orleans & Texas.

If the East Tennessee and the Richmond & Danville do not execute the agreement, the breaking up of the organization is said to be sure to follow.

With a few more signers to the agreement the more conservative roads think they can prevent any serious cutting of rates in marketing the great cotton crop this fall. The officers of the association elected for the ensuing year are: President, Joseph E. Brown, of Georgia; vice-president, John W. Thomas, of Nashville, president of the Nashville, Chattanooga & St. Louis Railroad; board of arbitration, Thomas H. Carter, of Richmond; Colonel Screven, of Savannah, and E. K. Sibley, of New York. E. B. Stahlman, of Nashville, was re-elected commissioner, and A. Pope, secretary. The association adjourned until the next annual meeting, in June, 1893. If all the roads do not ratify the new agreement by August 31, Commissioner Stahlman will call a special meeting to determine the advisability of continuing the association.

Railroad Notes.

THE Board of Trade at Washington, D. C., has adopted a resolution urging the speedy passage of the bill providing for the entrance of the Norfolk & Western Railway into the District of Columbia.

THE receivership for the Central Railroad & Banking Co. has been made permanent by an order issued by Judge Speer, of the United States Court at Savannah. H. M. Comer, the temporary receiver, was appointed.

THE earnings of the West Virginia Central & Pittsburg for June are \$77,986.44 and expenses \$66,290.06, against \$92,322.81 and \$62,497.70 for the same month of 1891. The first six months of this fiscal year

shows earnings of \$539,437.33 and expenses of \$367,323.44; the figures for the same period of 1891 are \$547,442.49 and \$353,764.73.

JUDGE MILLER, of the Superior Court at Macon, has passed an order to again place the Macon & Atlantic up for sale at public auction and fixed the date as October 4. The minimum price named is \$500,000.

At a meeting of the stockholders of the North Carolina Railroad, W. F. Kornegay was elected president, and P. B. Ruffin, secretary and treasurer.

At the annual meeting of stockholders of the Columbus Southern, W. B. Low was elected president; J. W. English, vice-president; G. W. Parrot, secretary and treasurer, and Cecil Gabbett, general manager.

THE Central Railroad of Georgia will establish the block system of signals on its line from Macon and the Georgia Railroad junction, a distance of three miles. The short interval between trains on this part of the road makes the innovation a necessary safeguard.

JUDGE JACKSON, of the United States Court at Parkersburg, W. Va., in the case of the Baltimore & Ohio Railroad vs. The West Virginia Transportation Co., appointed M. C. C. Church, receiver.

HENRY E. HOWLAND has been appointed receiver of the Florida Construction Co. on behalf of stockholders, who allege fraud or carelessness in its financial transactions with the Jacksonville, Tampa & Key West Railroad.

THE construction of the Bristol, Elizabethton & North Carolina Railroad to Elizabethton, Tenn., is being pushed, and there seems every reasonable assurance that the road will be finished in August.

A. W. Thweatt has been appointed Eastern passenger agent of the Richmond & Danville, with headquarters in New York city. His position of district passenger agent of the same road, with office at Atlanta, is filled by the appointment of W. H. Tayloe.

THE St. Louis, Iron Mountain & Southern Railway Co. will extend its \$4,000,000 first mortgage 7 per cent. bonds maturing August 1, 1892, at the rate of 5 per cent. until May 1, 1897.

AN estimated statement of the earnings of the Louisville & Nashville Railroad for the year ending June 30 shows gross earnings of \$21,219,525, an increase of \$1,998,796 over last year. The operating expenses were \$13,734,580, an increase of \$1,696,135. The net earnings were \$7,484,945.

FOR June, 1892, the earnings of the Baltimore & Ohio Railroad on lines east of Ohio river are approximated at \$1,571,404.78 and expenses \$1,113,142.74, against \$1,544,010.39 and \$1,076,153.43 for June of 1891. On lines west of Ohio river the earnings were \$459,178.27 and expenses \$403,757.60, against \$455,592.15 and \$385,942.22 for the same month of last year.

THE Peel Splint Coal Co. will hold a meeting on August 13th at Lewiston, W. Va., to consider the issue of preferred stock not exceeding, together with the common stock of the company, its maximum capital.

THE Danlow Coal Co. has commenced shipping coal from its mine recently opened in the Guyandot tract in West Virginia.

EVAN POWELL, president of the Powelton & Pocahontas Railroad Co., of Powelton, W. Va., has made arrangements for the shipment of 1,000,000 tons of Pocahontas coke to Mexico.

MESSRS. JACK & NICHOLSON are opening a coal mine near Attalla, Ala., and expect to commence shipments in a couple of weeks.

The City of Raleigh, N. C.

[From a Staff Correspondent.]

RALEIGH, N. C., July 15.

The capital city of the Old North State has during the past few years very quietly but very effectually changed from a prosperous commercial town to an active industrial city. So quietly and with such little demonstration has this change been wrought that really it has not yet thoroughly impressed itself upon the minds of a few of the people who live here, but the fact exists nevertheless, and the evidences of it are so manifest and of such magnitude as to make a decided impression upon the stranger who comes hither, and also to gratify nearly everyone who is connected with the city or in any way interested in its development. One of the leading men of the State—who has no interest here but who is an occasional visitor—said to me some days ago that the advantages of Raleigh and the secret of its continued prosperity might be summed up under four short heads: First, its excellent climate; second, its educational advantages; third, its cheap but commodious and attractive homes, and fourth, its social, moral and intellectual excellence.

These are indeed the cornerstones upon which the city is being built. It must be admitted that they are necessary essentials to the ultimate prosperity and greatness of any city. Raleigh possesses them to an eminent degree. Situated as it is midway between the blizzard North and the blistering South, it enjoys an all-the-year-round climate that is not only healthful but delightful. Being the capital of the Commonwealth, it has always been to some extent the State's social and political mecca, and has very naturally attracted to its citizenship many prominent people from every direction. With a steadfast devotion to the cause of education, it has built and maintained institutions of learning both denominational and non-sectarian that each year send out into the realm of womanhood and manhood well-trained minds and well-rounded characters, whose lives adorn society here and elsewhere.

About a century ago the city was founded, and its name perpetuates the memory of Sir Walter Raleigh. It is situated in Wake, the metropolitan county of the State, the name of which recalls the graces and charms of Esther Wake, the reigning belle of old Governor Tryon's famous administration.

During the epoch of Southern slave holding, when towns existed more for convenience than for commerce, Raleigh was content to remain a sparsely-built settlement in the midst of a beautiful oak forest, which long ago gave it its familiar nickname, the "City of Oaks." Thousands of these oaks still remain. They have grown into imposing "giants of the forest," and give to the city a cool, shaded appearance that is distinctly attractive and pleasing.

After the events of '65 a spirit of commercial activity struck the old town. Young men came from the surrounding country to join in with those "to the manor born." They were a part of a rugged remnant of Southern manhood that had escaped the shower of bullets that rained from '61 to '65. They left depleted homes, hitherto rich in the excesses of old-time Southern habits and custom. They came to the counting rooms with minds untrained in business affairs, but, appreciating the situation, determined to meet the demands of the inevitable. A large volume of general business, making Raleigh a prominent mercantile centre, was the result.

Old wooden buildings soon yielded to the encroachments of modern architecture. Handsome business blocks followed each other up until solid blocks of imposing architecture lined each side of several of the principal streets. Educational, religious, journalistic, banking and other inter-

ests were quickened into activity, which enabled them to keep pace with the steady march of progress. For two decades the mercantile interest practically monopolized the vigor and manhood of the town. Public improvements and conveniences, manufacturing enterprises, etc., were dreamed about by some and boldly suggested by others, but, as in other towns of like character and size, they were for a long time "cussed" about as much as discussed, but they finally came. The business men of the town, to use a commonplace expression, "got a move on 'em," and united their efforts in inducing the city authorities to establish and maintain such public works and conveniences as would make the citizen happier, healthier and more comfortable. The Raleigh Chamber of Commerce and Industry was organized; more than 200 live energetic citizens joined it; standing committees were appointed on the various interests of the city; they went to work and the results of their work were almost incalculable.

Few cities in the country are to-day so well provided with public conveniences. Its system of water supply is practically perfect; its system of sewerage equally so; its principal streets are paved with granite blocks from curb to curb; its fire department, which has been thoroughly organized and equipped, is set in motion by the mere touch of a thoroughly complete system of electric fire-alarm. I believe that in point of thorough organization and excellence the Raleigh fire department stands No. 3 among all the cities in the country. A system of electric street railway, comprising about six miles, is now in successful operation.

Manufacturing enterprises are going up all about, and the hum of machinery is heard in almost every section and suburb of the city.

Near the centre of the city are four squares set aside for public and park purposes. They have received the attention of the florist and the gardener and have been made delightful places of rest and recreation for childhood, for youth and for the weary of all ages.

On the western suburbs is situated Pullen Park, containing sixty-five acres, donated to the city by a resident philanthropist, Mr. R. S. Pullen. It seems that nature had anticipated this munificent gift and left little for the city to do to make this a most beautiful park. This Mr. Pullen himself and the city have done, and the people of Raleigh are the beneficiaries.

In the northeastern suburbs is Brookside Park, containing twenty acres or more, which is also an attractive and popular resort.

Extensive gas and electric-light plants have planted their mains and stretched their wires throughout the city from border to border, and 1,200 candle-power arc lights send rays of brilliancy up and down the thoroughfares from twilight until daylight.

Among the strongest arguments that can be made in favor of Raleigh to-day is the fact that during the past few months nearly a half million of outside dollars have come here for investment—money made by prominent gentlemen in the exercise of good business judgment, who in the exercise of that same good judgment have selected Raleigh as a good place to invest it. It is not going into speculative schemes—there are very few of these here—but the money is going into brick and mortar in the erection of buildings and enterprises that are a credit not only to Raleigh, but to the State as well. These are among the evidences that sustain my first assertion that Raleigh has changed from a town to a city.

Of these things and of Raleigh's industrial, educational, banking, railroad, hotel, manufacturing and other interests I shall write more in detail in subsequent articles.

It is the purpose of Raleigh, now that she has thoroughly established herself upon a sound and solid basis, to modestly proclaim the fact to the outside world and to ask the traveler or the tourist to stop over for a day, a month or a lifetime, and to further suggest that if he has either brains, energy or money to invest, or if he wishes a home where health, happiness and prosperity reign, the "City of Oaks" flings open her gates and bids him enter.

F. B. ARENDELL

Electricity Among Norfolk Truck Farmers.

NORFOLK, VA., July 18.

Editor Manufacturers' Record:

The trucking or market gardening belt of Southeastern Virginia is, perhaps, we may safely claim, the most important trucking field in the United States. We may even go farther and safely claim that no other equal area of land and waters in the world can make such a showing of land and water products as the section lying immediately around Norfolk, Va. The trucking belt may be said to be about thirty miles in length east and west, and fifteen miles wide north and south. Nine railroads, with numerous spurs, side-tracks, switches and suburban stations, penetrate this belt from every direction on their way from the interior to their deep sea terminal here in these waters. There is hardly a farm in this 450 square miles of territory that is more than two miles from railroad transportation. Two canals terminate on these waters, penetrating this wonderfully productive belt, and bring in large quantities of farm produce.

Nine of the finest shell turnpikes in the world enable the farmer to rapidly haul large loads from farm to market by horsepower.

The numerous arms of the sea, penetrating the land in every direction, and all concentrating in this harbor, enable the farmer to use steam or even the wind to send his produce to market. Even the tide is used as a motor, and truck in flat boats is floated to market by the tidal current. There is no farm in the above-named 450 square miles of land that is more than three miles from navigable water.

One would think that this was enough for one single section to possess and enjoy, but in accord with "to him that hath shall more be given," electricity is to be added to our motive powers, by means of which our farmers are to send their farm products to market by means of the electrical current.

In one of our trips the other day we visited the old town of Hampton, which is connected with Old Point Comfort (Fortress Monroe) by a line of electric railway. While examining the "Old Episcopal Church," said to be the third oldest church in America built by English people, we saw two electric flat cars pass rapidly down the line en route for Old Point loaded to their full capacity with potatoes, cabbage, cucumbers and tomatoes. We believe this to be the first point in the world where "taters are toted to market" by electricity. The sight was a novel one. On one hand was the old church, with its ivy-covered walls and its old tombstones dating back to 1700, and here within twenty feet was an electric line carrying farm products to market. Extremes meet in Hampton. A few minutes after the electric train loaded with vegetables had passed out of sight, a venerable looking darkey with superannuated steer and rickety cart came in view and passed slowly along down the same street. He, too, was bound for "Ole Pint" with his load of "garden sass," and he got there, too, because later in the day we saw the same old cart standing side by side with the electric car on the government wharf at Fortress Monroe. Extremes meet here surely.

A. JEFFERS.

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BALTIMORE, JULY 22, 1892.

Notice to Advertisers.

The last forms containing advertisements
are closed on Tuesday afternoon. New adver-
tisements or changes should be received not
later than Tuesday noon to ensure attention
in the issue bearing date of the following
Friday. Reading matter should be in our
office on Wednesday, although late news can
be received early Thursday morning.

By the death of Cyrus W. Field this
country has lost the last one of those four
great men whose efforts were the founda-
tion of the telegraph system of to-day—
Morse, Field, Henry and Vail, all men
who were pronounced enthusiasts, cranks
and lunatics, but whose prophecies have
been realized a hundred times over, and
we are yet only in the infancy of the
science they put into practical and daily
use.

A SHORT time ago a party of English
capitalists were trying to secure all of the
New Orleans compresses and put them
under one management, but for some
reason the deal failed. It seems, however,
from present indications, that a similar
effect will be produced shortly, as the com-
presses in that city are going into a combi-
nation among themselves and propose
raising the rate five cents per bale. This
increase is said to be due to the advance
in prices given to laborers, but a glance
over the books of a compress company
leads one to believe that many more con-
cessions could be made to laborers without
advancing the price to the customer and
still leave sufficient margin for a big profit.
As usual, the farmer pays and the factor
gets the profits.

THERE is a question which has been
asked by almost every one who has seen or
ridden on an electric car—that is, Is there
any danger of getting a shock? Those
who are familiar with electric car construc-
tion are often amused at this question, and
probably the best answer which can be
given to it is that of the conductor of an
electric car, who, on being asked by a
nervous passenger whether she would get a
shock if her foot touched an iron bolt in
the floor, was told that it was not possible
unless she put the other foot on the trolley

wire. Electric cars are quite safe, and
unless a connection be made between the
trolley wire and some metal work leading
to the ground no shock is possible, and
even then the current generally in use is
rarely sufficient to cause death.

Pig Iron Production and Stocks

The official figures of the production of
pig iron, as collected from the manufac-
turers by the American Iron and Steel
Association, show that the output for the
first six months of 1892 was 5,374,943 net
tons, as compared with a production of
5,501,175 tons in the last half of 1891. Con-
sidering the depressed condition of the
iron market during the present year, the
rate of production has been remarkable.
By half years the output since the begin-
ning of last year has been as follows in
net tons:

	Net tons.
1891—First half.....	3,772,280
Second half.....	5,501,175
1892—First half.....	5,374,943

From the above figures it is seen that
the production during the past six months
was only 126,232 tons below the output of
the closing six months of 1891, the half
year of largest production in the history of
the industry. By adding the output of
these two half years we have the phenom-
enal total of 10,876,118 net tons as
the production for the twelve months, an
amount over 500,000 in excess of the quan-
tity made in the year of previous greatest
activity, 1890.

Although the aggregate production in the
first half of 1892 is less than in the last
half of 1891, the decline throughout the
country was not uniform. In the Northern
and Western States, New Jersey, Ohio,
Indiana, Minnesota, Missouri and Colorado
show an increase in production, all the
other States in this section exhibiting a
decline. Michigan and Wisconsin, the
centre of the charcoal iron industry, show
a considerable reduction in output.

The production of pig iron in the South-
ern States is shown in the following table
in net tons:

States.	Second half of 1891.	First half of 1892.
Alabama.....	514,768	536,627
Virginia.....	188,819	193,776
Tennessee.....	181,681	170,080
West Virginia.....	78,660	89,866
Maryland.....	88,214	55,979
Georgia.....	35,440	3,730
Kentucky.....	31,446	36,567
Texas.....	12,437	7,171
North Carolina.....	2,660	2,075
Total.....	1,131,662	1,091,871

Alabama continues to show growth as a
manufacturer of pig iron. The most
marked decline in the Southern States
occurred in Georgia. This was due to the
fact that all the coke furnaces in the State
were idle during the present year.

According to fuels used, the production
for the whole country is as follows:

Fuels.	Second half of 1891.	First half of 1892.
Anthracite.....	1,074,141	1,043,503
Charcoal.....	356,109	313,505
Bituminous.....	4,070,925	4,017,935
Total.....	5,501,175	5,374,943

On June 30, 1892, there were 256 fur-
naces in blast, as compared with 297
blowing on March 31st, and 313 on
December 31st.

The quantity of pig iron held by makers
or their agents, and unsold, on June 30th
was 826,500 net tons, against 804,808 tons
on hand unsold on March 31st, and 667,893
tons unsold December 31st, 1891. Pennsyl-
vania furnaces held 245,060 tons on June

30th, while the Ohio producers had 100,124
tons, and the nine Southern States a total
of 224,368 tons.

The American Pig Iron Storage Warrant
Co. held in its yards on June 30, 1892, 81,-
648 net tons of pig iron, of which 39,191
tons are included in the above statements
as being still controlled by the makers,
leaving 42,457 net tons of pig iron in other
hands, much the larger part being Alabama
iron.

Foreign Trade of the South
in 1891-92.

The statement of foreign commerce for
the fiscal year ended June 30 which has
just been issued by the Treasury Depart-
ment shows the largest figures that have
ever been reached, the total value of im-
ports and exports being \$1,857,726,910, as
compared with \$1,729,397,006 during the
fiscal year 1891, an increase of \$128,329,904,
and an increase of \$370,193,883 since 1889.
The imports and exports for five years
past have been as follows:

	Imports.	Exports.
1888.....	\$723,957,114	\$695,954,507
1889.....	745,131,652	742,401,375
1890.....	789,310,409	857,828,684
1891.....	844,916,196	884,480,810
1892.....	827,391,284	1,030,335,626

These figures show a balance of trade in
our favor for the past fiscal year amounting
to \$202,944,342, which is the largest since
1881, when the excess of exports over
imports was \$259,712,718.

The decrease in imports is due chiefly to
the larger reduction in the item of tin-
plate. In eleven months of the year the
decrease in imports of tinplate amounted
to over \$18,000,000.

The increase in exports is due to the
enormous foreign shipments of breadstuffs,
which were greater than in any previous
year. The value of the breadstuffs ex-
ported was \$301,828,601, as compared with
\$128,121,656 for the fiscal year 1891, being
an increase of \$173,706,945. The increase
in this item alone is greater than the entire
increase in exports, but it is largely offset
by the reduced value of cotton exports,
which fell from \$290,712,898 in the fiscal
year 1891 to \$258,447,741 during the past
year, although there was a considerable
increase in the quantity of the exports.
Cotton and breadstuffs were the principal
factors in shaping the figures of the past
year.

The showing that is made by the South
in these figures is exceedingly gratifying.
The exports from twenty-four Southern
ports increased \$35,157,666 over the fiscal
year 1891, while the imports decreased
\$7,960,969 during the same period. The
figures for each port for the two periods
are given below:

IMPORTS FOR YEARS ENDED JUNE 30.

Ports.	1892.	1891.
Baltimore.....	\$13,418,253	\$20,555,687
Beaufort, S. C.....	25,000	90,483
Brazos de S., Texas.....	105,655	187,674
Brunswick, Ga.....	13,742	10,012
Charleston, S. C.....	896,681	993,248
Corpus Christi, Texas.....	3,012,804	2,423,401
Fernandina, Fla.....	1,117,000	648,021
Galveston, Texas.....	222,925	287,123
Georgetown, D. C.....	834,496	1,270,578
Key West, Fla.....	390,370	592,800
Louisville, Ky.....	168,784	88,675
Mobile, Ala.....	18,909,553	20,267,060
New Orleans, La.....	3,118	60,010
Newport News, Va.....	44,415	75,172
Norfolk & Portsm'th, Va.....	6,656,185	5,619,913
Paso del Norte, Texas.....	1,758	2,963
Pearl River, Miss.....	64,178	144,569
Pensacola, Fla.....	46,066	47,260
Richmond, Va.....	1,015,769	1,214,343
Saluria, Texas.....	301,994	515,862
Savannah, Ga.....	425,131	519,404
Tampa, Fla.....	34,428	265,824
Teche, La.....	184,977	223,375
Wilmington, N. C.....		
Totals.....	\$48,148,421	\$56,109,399

EXPORTS FOR YEARS ENDED JUNE 30.

Ports.	1892.	1891.
Baltimore.....	\$98,850,197	\$64,412,247
Beaufort, S. C.....	544,932	932,677
Brazos de S., Texas.....	498,176	444,774
Brunswick, Ga.....	5,581,110	7,312,401
Charleston, S. C.....	16,718,386	21,040,886
Corpus Christi, Texas.....	4,127,250	3,760,692
Fernandina, Fla.....	1,178,701	681,284
Galveston, Texas.....	35,386,256	33,772,005
Georgetown, D. C.....		
Key West, Fla.....	831,043	371,226
Louisville, Ky.....	2,784,044	3,404,333
Mobile, Ala.....	131,252,873	109,106,677
New Orleans, La.....	14,444,367	10,061,744
Newport News, Va.....	13,065,837	16,475,822
Norfolk & Portsm'th, Va.....	9,021	20,038
Paso del Norte, Texas.....	1,077,707	1,023,200
Pearl River, Miss.....	2,982,246	3,951,928
Pensacola, Fla.....	5,724,036	8,825,162
Richmond, Va.....	2,359,440	3,113,468
Saluria, Texas.....	25,704,173	33,566,426
Savannah, Ga.....	185,860	173,496
Tampa, Fla.....	1,643	1,266
Teche, La.....	5,321,414	9,070,284
Wilmington, N. C.....		
Totals.....	\$368,629,622	\$333,471,956

In 1891 the balance of trade was in
favor of the South to the extent of \$277,-
362,566, while for the year just ended it
was \$320,487,201 in favor of the South.

In view of the reduced value of the cot-
ton exports, the increase of Southern ex-
ports has an unusual significance. Balti-
more shows a decline of \$7,137,434 in im-
ports, but an increase of \$34,437,950 in
exports, due to large shipments of grain.
This factor appears in a striking manner
in the figures for New Orleans. With a
smaller value for its cotton, New Orleans
shows a gain of \$22,146,186 in exports,
which was contributed chiefly by the
rapidly growing grain trade of the port.
We have several times called attention to
the increasing grain shipments from New
Orleans, but these figures for the past year
are very striking. New Orleans now
occupies fourth place among the ports that
ship breadstuffs, the figures for the leading
cities being as follows:

	1891.	1892.
New York.....	\$40,234,840	\$110,805,631
Baltimore.....	18,779,162	30,409,432
Philadelphia.....	5,997,063	28,915,725
New Orleans.....	4,115,934	22,310,126
Boston.....	10,033,438	16,757,227

Charleston shows a decline of \$5,222,500
in the value of exports and Savannah a de-
crease of \$7,802,253, due in both cases to
the shrinkage of cotton values. Bread-
stuffs appear again at Newport News in an
increase of \$3,482,623, and at Galveston,
where the grain was sufficient to offset the
reduced value of cotton and give the port
an increase of \$1,614,251 in export values.
Increased shipments of phosphate rock
from Fernandina, Fla., brought the exports
from that port from \$681,284 in 1891 to
\$1,178,701 in 1892.

To our mind the most striking feature of
these figures is the growing importance of
the export trade in breadstuffs from South-
ern ports. The trade of the past fiscal
year adds great emphasis to what has
already been said in behalf of the Southern
grain trade. What has been gained will
not be lost, and any shrinkages in cotton
shipments will be more than made up in
the growing breadstuffs trade.

Baltimore & Ohio in South
west Virginia.

The continuation of the Valley branch
of the Baltimore & Ohio from Lexington
to Roanoke is a subject which is again
being agitated by the business interests of
the Shenandoah valley and the city of
Baltimore, and the movement has aroused
an almost overwhelming sentiment in its
favor. At various times attempts have
been made to induce the management of
the Baltimore & Ohio to pierce the rich
mineral and timber territory of Southwest

Virginia, but for reasons not clear have met with no practical response from that corporation.

The advantages to be obtained by Baltimore in a commercial sense are so pronounced as to be obvious to all familiar with the friendly attitude of the business men of Southwest Virginia towards this city. The leading citizens of that marvelously resourceful section are emphatic and sincere in their preference to trade with Baltimore, but, having no direct connection, the important factor of lower freight rates sends the bulk of trade elsewhere. The position of this region makes it naturally tributary to Baltimore, and its rapid industrial, agricultural and commercial growth assures its future as a rich and populous part of the United States, and accentuates the necessity for Baltimore, as an essential to its own future greatness, to acquire closer trade relations.

The benefits to Baltimore are not, however, limited to superior advantages for the control of the Valley trade, but such an extension would give what it practically has not at present—a trunk line to the South. In this connection the changes being made in the railroad map of the coast States, together with several promising projects, are suggestive. For instance, the Seaboard Air Line is entertaining the building of a line from Monroe, N. C., to Winston, N. C., which is the terminus of the Roanoke & Southern division of the Norfolk & Western. From Monroe to Columbia, S. C., it is reasonably safe to assume will be built a line by the South Bound Railroad Co., inasmuch as the original plan for the building of this road contemplated a direct route to Roanoke and thence north. The South Bound now extends from Columbia, S. C., to Savannah, and by a recent deal with the Florida Central & Peninsular the construction of a road from Savannah to Jacksonville, Fla., is provided for.

Profitable Cotton Manufacture in the South.

The exceptionally low price of raw cotton during the past year has given to Southern manufacturers an advantage in competition with the North upon which they have not been slow to realize greatly to their profit. The past year has been one of the most prosperous ever known in the Southern cotton manufacturing industry, and mills have been paying good dividends and expending large amounts in improvements. We believe this statement to be true beyond question and capable of proof by figures. We regret, therefore, to see that *Dixie*, one of our interesting contemporaries, which is published at Atlanta, Ga., views the situation in a directly opposite light, assuming a position that is not warranted by the facts in the case. John Hill, of Columbus, Ga., contributes to *Dixie's* columns a very interesting, logical and sound article, in which he urges the necessity of better machinery in Southern cotton mills, a necessity that seems to be generally recognized, except by the mill owners themselves. The use of antiquated machinery and the persistent additions of second-hand machinery are the greatest handicaps upon the Southern textile industry at the present time. We endorse every word Mr. Hill and *Dixie* have to say on this point, but we differ with Mr. Hill in the first sentence of his article:

Cotton manufacturing in the South is not at present in a flourishing condition.

And with the conclusion that *Dixie* draws from Mr. Hill's contribution:

The South has gone on in the same old ruts from bad to worse, until the majority of our mills have ceased to declare profits and are absolutely fronting losses and failures.

We do not believe that Southern cotton mills are either conducting business at a loss or at the sacrifice of their plants, nor can we accept Mr. Hill's assertion that the conditions are the reverse at the North. We give below, in condensed form, some facts regarding the operations of Southern mills during the past year which we have gathered, and which we think will compare very favorably with any showing that can be made by Northern mills. During the latter half of 1891 and in 1892 to date the following mills are known to have declared dividends:

Langley Manufacturing Co., Langley, S. C., capital stock \$400,000, semi-annual dividend 3 per cent. for latter half of 1891.

Fayette Cotton Mill, Fayetteville, N. C., capital stock \$45,000, semi-annual dividend 6 per cent. for latter half of 1891.

The Enterprise Factory, Augusta, Ga., capital stock \$500,000, earnings in 1891 \$156,000, which was used to retire preferred stock.

Muscogee Manufacturing Co., Columbus, Ga., capital stock \$157,500, declared annual dividend of 6 per cent. for 1891.

The Sibley Manufacturing Co., of Augusta, Ga., earned net \$75,868 on a capital stock of \$968,900 during the year ended March 26, 1892, which is equivalent to nearly 8 per cent. In his annual report President Wm. C. Sibley said: "We now have the production of all our wide looms sold ahead for the next six months at very satisfactory prices, and that most of our other looms is also well under contract."

Columbia Cotton Mills, Columbia, Tenn., capital stock \$100,000, declared annual dividend of 6 per cent. for 1891.

Swift Manufacturing Co., Columbus, Ga., capital stock \$200,000, declared annual dividend of 8 per cent. for 1891.

Henrietta Mills, Charlotte, N. C., capital stock \$200,000, declared a dividend of 5 per cent. for 1891.

La Grange Mills, La Grange, Ga., capital stock \$153,000, declared annual dividend of 7 per cent. for 1891.

Griffin Manufacturing Co., Griffin, Ga., capital stock \$125,000, declared annual dividend of 10 per cent. for 1891.

Crown Cotton Mills, Dalton, Ga., capital stock \$100,000, declared annual dividend of 25 per cent. for 1891.

Tarboro Cotton Factory, Tarboro, N. C., declared dividend of 14 per cent. in October, 1891.

Raleigh Cotton Mills, Raleigh, N. C., capital stock \$125,000, declared semi-annual dividend of 4 per cent. for latter half of 1891.

Salisbury Cotton Mills, Salisbury, N. C., capital stock \$133,000, declared semi-annual dividend of 6 per cent. for latter part of 1891 and first three months of 1892.

Prattville Cotton Mills, Prattville, Ala., declared semi-annual dividend of 10 per cent. for 1891-92.

Ada Manufacturing Co., Charlotte, N. C., capital stock \$150,000, declared 4 per cent. dividend in August, 1891, after having expended a large sum in betterments.

Pacolet Mills, Spartansburg, S. C., capital stock \$150,000, declared semi-annual dividend of 5 per cent. for 1891-92.

Whitney Mills, Spartansburg, S. C., capital stock \$190,000, declared semi-annual dividend of 3½ per cent. for 1891-92.

Fishing Creek Manufacturing Co., Richburg, S. C., capital stock \$100,000, declared annual dividend of 8 per cent. for 1891-92.

Newberry Cotton Mills, Newberry, S. C., capital stock \$242,470, earned \$4 per spindle in 1891 and are laying it aside with view of doubling capacity of mill.

Augusta Cotton Factory, Augusta, Ga., capital stock \$600,000, net profit in year ending June 30, 1892, \$95,000, a large part of which was applied to betterment account.

Lynchburg Cotton Mills, Lynchburg, Va., capital stock \$300,000, earned dividend of 5 per cent. in 1891 and purchased 5,000 additional spindles and 200 looms.

The Newnan Cotton Mills, Newnan, Ga., paid a dividend of 7 per cent. on its capital stock of \$70,000 out of the profits of last year's business, and has a surplus of nearly \$20,000.

The Graniteville Manufacturing Co., of Graniteville, S. C., which has a capital stock of \$600,000 and a surplus of \$686,264 70, earned last year \$103,957.02 net. Out of this was paid a dividend of 10 per cent., and \$31,487.16 was expended in the purchase of new machinery.

The Charlottesville Woolen Mills, of Charlottesville, Va., capitalized at \$250,000, has paid annual dividends of 7 per cent. for three years past.

These are but a few of the cotton mills of the South, but their operations bear unmistakable evidences of profitable business, and the fact that many of them have devoted a large portion of their earnings to extensions and improvements indicates that the mills are not being sacrificed for the sake of profit. Within the past year the number of active spindles in the South has increased by 367,155—from 1,702,382 to 2,069,537. Despite their handicap of poor mechanical equipment and lower efficiency of labor, the Southern cotton mills are doing a great volume of business and are making money almost without exception. There is no ground for such assertions of losses and impending bankruptcy as those which have been made by *Dixie*.

One other point raised by our contemporary invites a word from us. *Dixie* says:

Another matter of essential importance would be the question of freights. This question was raised in the old association, and a committee of twelve men were appointed to meet in Atlanta later on to devise ways and methods for bringing about lower freights. This committee has never met and nothing has been heard of it. Meanwhile the necessity of action in this matter is evident in the fact that freight on cotton goods from almost any Eastern point to New York is twelve cents per 100 pounds, and from Eastern points to St. Louis it is thirty cents per 100 pounds, while from Southern points to New York it is sixty cents and from Southern points to St. Louis it is fifty-seven cents per 100 pounds.

Our comment on this is the following extract from a letter received by us a few days ago from a large cotton manufacturing concern in New England:

A mill on similar goods to ours located in the South is able to send its goods from their point to Boston for forty-nine cents per 100 pounds. Cotton in large or small quantities, compressed or non-compressed, loaded at the same station and billed to Connecticut, costs us at the rate of ninety cents per 100 pounds freight. Mr. Carter, the chairman of the classification committee at Atlanta, Ga., informed us that these rates are given to encourage the infant industries of the South. You can readily see that this is a profit in itself, half a cent a pound for what we call coarse fabrics.

It will be seen from these two expressions of opinion that the same question looks quite different according as it is viewed from one standpoint or the other.

We leave the question with these assertions: The cotton mills of the South are far behind their Northern competitors in the matter of mechanical equipment, but with good management, cheap cotton and cheap labor they are earning a larger proportion of profit than competing mills in the North. With modern machinery and

the increased efficiency of labor consequent thereto, the position of the Southern cotton mills would be impregnable. Even under existing circumstances, however, there is no fear for the future in the South. There is a general tendency towards better mill equipment and a desire to enter upon the manufacture of finer grades of goods. All this will come in good time. The industry is young, and at its present stage comparisons with the advanced condition of the industry in New England are unfair to the South.

Recent Publications.

A DICTIONARY OF ELECTRICAL WORDS, TERMS AND PHRASES. By Edwin J. Houston, A. M., professor of natural history in the Central High School of Philadelphia. Second edition. Rewritten and greatly enlarged. The W. J. Johnston Co., Limited, New York. Price \$5.00.

When Professor Houston issued his electrical dictionary three years ago, it was the first work of its kind relating to the science. It was not without the faults incident to a pioneer dictionary, but notwithstanding its defects, it was immediately successful and the edition was soon exhausted. In the revised edition which has just been published, Professor Houston has practically written a new book based upon the lines of the old one, but without its defects of arrangement and treatment. The present work is as nearly complete as is possible to make a dictionary of a science whose vocabulary is being added to every day.

Professor Houston is to be congratulated for the admirable manner in which he has conceived the work and his success in its development. The definitions are clearly stated, and the brief statement of the principles involved in the definition are explained in popular phrase so that it is impossible to mistake their meaning. The work is, in consequence, more than a compendium of word definitions; it is almost an encyclopedia. The amount of scientific information which it is possible to acquire from a perusal of its pages is surprising. It might well be used as a text-book for schools, as indeed we are informed it is so employed by the author with his classes. A wider vocabulary of words relating to electricity will be hard to find, and it is certain that no other dictionary will invade its peculiar field for many years to come.

While the work is indispensable to scientists and investigators in the field of electricity, it is even more valuable to the large army of electricians, operators, linemen, motormen, engineers, patent attorneys and many others, to whom an exact knowledge of the definitions of the electrical words, terms and phrases they use and the principles upon which they are based is important for progressive work. Any book that simplifies knowledge and brings it within the range of the average man has more than ephemeral value. This is, we hold, the merit of Professor Houston's dictionary, and we welcome it as an important addition to the literature of our day as well as a valuable aid to the practical and scientific worker in the field of electricity.

THE Port Tampa Mail announces the establishment of a mail steamship line between Port Tampa, Fla., and Colon, a port on the Caribbean sea at the northern terminus of the trans-isthmus railroad. The steamers will also stop at Greytown, the entrance to the Nicaragua canal; Bluefields, the leading banana port of the world, with yearly exports of \$1,500,000, and several other ports of large importance. A commerce of great dimensions crosses the Isthmus of Panama by the Aspinwall & Colon Railroad, and a large proportion must necessarily find its way into the United States through Port Tampa, and this mail service will prove the forerunner of an extensive line of trade.

LUMBER MATTERS.

[For lumber market reports see pages 34, 35 and 36. In the Construction Department, on pages 37 and 38, will be found a complete record of new mills and building operations in the South.]

In the Memphis District.

[From our own Correspondent.]

MEMPHIS, TENN., July 19.

Some preparations are being made here for increased facilities in locations for lumber and woodworking plants. Some parties are building a bridge across Wolf river a short distance above its intersection with the Hatchie, some half a mile or so above the city limits, and will run a side-track from the Chesapeake & Ohio Railroad into the territory reached, and will thus open up to available building some mile or more of valuable river front on Hatchie river and connect it with railroads centering here, and with the Wolf river lumber territory.

Work on the foundations for the Pratt Cotton Mills at West Huntsville, Ala., and also on the new city hall and market house, was begun last week. The cotton mill is the result of the commenced improvements and extensions of the Nashville & Chattanooga Railroad at that city.

The Brinkley (Ark.) Real Estate & Improvement Co. was organized last week with T. H. Jackson, president, and J. J. McNally, secretary. The purpose is to boom the manufacturing and business advantages of Brinkley, and bring it to the attention of Northern capitalists.

There are a number of new enterprises and additions during the past week in the territory tributary hereto. The McLein Slave & Heading Co., of Grenway, Ark., is putting in new machinery. The Little Rock (Ark.) Cooperage Co., whose plant was destroyed by high water, is now rebuilding. The Milan (Tenn.) Flouring Mill, with a capacity of 100 barrels a day, will be completed in readiness for the first of the new crop. E. W. Farrer has bought the machinery for a new saw mill which he is putting up at Fordyce, Ark. Perkins & Miller, of West Lake, La., have been succeeded by the Perkins & Miller Manufacturing Co., Limited, and will largely increase their plant and facilities.

There are several new enterprises in contemplation here under the auspices of the Young Men's Business League, and the probabilities are for a goodly number of additions to our manufacturing enterprises during the early fall. Money, which has been tied up in cotton for so many months past, is getting released, and consequently is easier to get hold of on good securities for legitimate business investments. There is also a better demand for money from the country for permanent improvements, and a better feeling is prevailing all through the high water district.

Arkansas Lumber Manufacturers.

The Lumber Manufacturers' Association of Arkansas held its semi-annual meeting at Little Rock, Ark., on the 13th instant, with the following members in attendance: Geo. K. Smith, secretary; R. W. Huie, Arkadelphia, Ark.; F. I. Pierce, Arkadelphia, Ark.; A. J. Neimeyer, Waldo, Ark.; W. A. Shields, Fordyce, Ark.; W. R. Pearson, Thornton, Ark.; A. H. Gates, Wilmar, Ark.; W. I. Ewart, Gurdon, Ark.; Frank Kendall, Kedron, Ark.; Walter Gates, Milner, Ark.; J. F. Rutherford, Pine Bluff, Ark.; Geo. W. Swartz, St. Louis, Mo.; F. R. Roemer, St. Louis, Mo.; C. T. Patterson, New Orleans, La.; J. S. Majors, Kearney, Ark.; T. J. Doyle, Muskegon, Mich.; Max A. Nulsen, Malvern, Ark.; C. G. Brooks, Smithton, Ark.; J. F. Miles, Camden, Ark.; J. A. Freeman, Melville, Ark.; B. Faist, Bryant, Ark.

In the absence of President J. T. West and Vice-President W. H. Mitchell, R. W.

Huie presided. The report of the secretary, George K. Smith, was as follows:

Something over a month ago a letter was sent to about all the manufacturers of yellow pine in this State, asking them if they would attend a meeting for the purpose of arranging a schedule of prices on upper grades, which should be maintained for a fixed time. About fifteen replies were received, mostly favorable, but all, or nearly all, modified by an "if." The feeling seemed to prevail that Arkansas alone is not strong enough to establish the general market. Some wanted help from Mississippi and Alabama, others from Missouri, others from Texas and Louisiana. We ought to discuss thoroughly to day the influence which Arkansas exerts on the general market, and decide once for all whether, as a State association, we shall continue to issue a price list.

We wish to congratulate the car-service committee on the work done in behalf of those cotton belt manufacturers who were ready to act when the opportunity was offered. The committee deserves praise for its earnest, thorough and successful work, which reflects credit on the members and on the association to which they belong. The methods adopted will serve as a guide for those on other roads who wish to protect themselves against the customary fall car famine.

A debate on the question "Shall we have fewer or greater number of flooring grades?" might be indulged with profit to our neighbors. The experiences of the past year have brought this question into prominence, and a recommendation from this association to the general association at its meeting in Kansas City on August 10 would be especially valuable as coming from the middle ground, which is reached by buyers and inquiries from the East and West. If any change is to be made it certainly should have the sanction of your competitors, in order that the burden shall not fall wholly upon the members of the association.

The general stock report, which is being compiled for the August meeting, is not complete yet. Thus far the reports received from Arkansas indicate larger shipments and less stock on hand than for the first six months of 1891. This is encouraging, as the best trade of the year is yet to come. Arkansas, with her advantageous position, will surely secure her just proportion of this trade, and her manufacturers will be prosperous and happy during the remainder of the year.

Chairman Freeman, of the car-service committee, reported verbally that arrangements had been perfected by which ten firms on the cotton belt leased 500 cars for their own exclusive use during year.

A prolonged discussion took place on a resolution to recommend to the Southern Lumber Manufacturers' Association that the grade of "star" be eliminated from the grading rules on flooring and ceiling, and that what is now star be included in first and second clear. After considering several resolutions to this end the following was finally adopted:

Resolved, That we recommend to the meeting of Southern Lumber Manufacturers' Association of August 10, the substitution of the following flooring grades for those now in effect, to wit: Clear straight grain, clear flat grain, star straight grain, star flat grain and common assorted grain.

The price-list committee reported in favor of using the list adopted by the board of directors of the Southern Lumber Manufacturers' Association at Memphis as a basis for flooring and ceiling; siding prices unchanged; finishing advanced \$1.00; clear, fifty cents; star molded casing advanced \$1.00; common boards advance fifty cents; fencing unchanged; dimensions, 2x4, 2x6 short lengths surfaced, unchanged; wider and longer and rough, all widths, advanced from twenty-five to fifty cents. The report was adopted.

The next meeting was fixed for Hot Springs on the second Wednesday in January next.

The Wanton Waste of Wood-workers.

One of the reasons why lumber manufacture in the Southern States, especially in the pine timber section, is less profitable than in the Northern States, notably the white pine region, is that the Southern method of manufacture is less thrifty, frugal and provident than the Northern. In the South there is not the same close attention to details—not the same economy in the utilization of waste material. Owing to long distances from market and high freight rates, the Southern lumber manu-

facturer is not able, with a profit, to ship and market common and cull lumber and coarse stuff, which if not used for fuel is left to rot in the woods. As a rule top logs are thrown away, which if there was a home market or it could be carried cheap enough to distant markets would make considerable difference in the manufacturer's bank account. The Southern manufacturers should unite in a movement to secure the co-operation of the railway companies in getting easier freight rates for this class of lumber, and thus saving the South many thousands, perhaps millions, of dollars.

What is essential to prosperous Southern manufacture is closer study of the economies—how to utilize to the best profit top logs and even the sawdust. This is a subject for discussion and debate in lumber associations, for communication and interchange of ideas through the lumber trade newspapers, to the end that out of some such symposium of economic opinion the Southern manufacturing guild may hit upon ways to save many dollars that are now thrown away with a reckless prodigality peculiar to the South. The diversification of industries at the South, the establishment of small manufacturing enterprises, may in time make a home market for coarse stuff and waste odds and ends, but there should be some industrious co-operative effort to hasten this economic new departure.—*Southern Lumberman*.

Yellow Pine Joists in the Northwest.

Yellow pine is pushing white pine and Norway timber hard in some dimensions in the Northwest, as witness the following which appears in the *Northwestern Lumberman* under the caption "The Innovation of Yellow Pine:"

It looks as if the copious introduction of yellow pine, long wide dimension, in this and other Northwestern markets, cannot be much longer delayed. The supply of long white pine and Norway logs has become so restricted that it is nearly all sold at the mills on contract to be cut. There is scarcely any surplus accumulation to draw upon at any period of the year. This state of things tends to keep up prices. The dealers in this city are complaining that they cannot buy long wide joists at prices that will yield them a fair profit in handling. There is no prospect that they will be able to buy this season at much, if any, lower figures. The minimum value seems to have become fixed. There is no reason for expecting that the Northern supply will be increased. Stumpage has got into strong hands, and the owners know the value of long timber suitable for conversion into joists. When the dealer wants a quantity of long wide stuff he is obliged to take a large percentage of slim jims, 2x6 and 2x8, in order to get a proportion of 2x10 and 2x12, 3x12 or wider, of the thicknesses named. If he purchase the long wide stuff as a separate quantity, prices relatively high are asked for it. This condition of the market has induced the yellow pine manufacturers to offer their long wide joists at prices within the reach of Northern dealers.

A price-list from a Texarkana (Texas) firm is in circulation among the dealers of this city that is setting them to thinking. It offers to deliver at this point or any other in this region 2x10 and 2x12, twenty-two and twenty-four feet long, at \$15 75 a thousand. The stuff is to be surfaced on one side and one edge. This would save the dealer seventy-five cents for planing mill work, bringing the joists to \$15 a thousand as compared to rough Norway or white pine. Such lumber is delivered from the yards at \$17 a thousand. It can be seen that there is a safe handling bill in the yellow pine joists. The same price-list offers to deliver 18 and 20-foot wide joists, surfaced as the other, at \$14.75.

Deducting seventy-five cents from this price for dressing and the rough yellow pine stands to rough Northern pine at \$14 a thousand, which compares favorably with the price of a like class of product in Northern pine delivered here by the cargo. Wide joists twenty feet long sell out of the yards at about \$16 a thousand. Thus there is a chance for fair profit in handling the 20-foot stuff also.

A feature of the yellow pine deal as opposed to Northern pine is that a yard man can order such sizes and lengths as he wants and they will be cut for him to order. He is not obliged to take a lot of slow-selling 2x6 and 2x8 in order to get the 2x10 and 2x12 that he most desires.

Evidently the only reason why the wholesale dealers of this city, and, as well, those doing a local business, do not go into the handling of yellow pine long, wide joists is because they are not used to it. It is a new thing. Besides, they must educate the contractors and carpenters to the use of it. When the ice shall have been broken there will be a rapid growth in the employment of yellow pine. It was so with the heavy girders and joists that are now almost entirely used in the "mill construction" of heavy warehouses and manufacturing buildings. There was a prejudice against them at first, but now yellow pine is the standard timber for the purpose named. It will be so with long, wide joists for ordinary building purposes if the manufacturers continue to present inducements in the matter of price as compared to the selling value of Northern pine.

Furthermore, there is a likelihood that short yellow pine dimension will come into vogue before long. It has already in portions of this State and Indiana, where freight rates from Arkansas are a little lower than to this city. Texarkana offers to deliver sized short piece stuff here at \$13 25 a thousand. That is too high a price to meet that of white and Norway pine, but the margin between the two is narrowing and may be wiped out in a year or two. Hemlock, however, will be something of a bar to yellow pine short dimension while the supply of that wood shall last.

Southern Lumber Notes.

MR. F. L. PECK, of Hathaway, Tenn., is operating two saw mills at that place and one at Pulstown, making a specialty of cottonwood. He states that he supplies large quantities to the Eastern market.

A CONTRACT has been closed by the Bridgeport (Ala.) Lumber Co. by which they have secured the timber of a large tract of Tennessee river bottom land near Decatur. The tract aggregates about 3000 acres, on which there is 3,500,000 feet of the finest oak timber. Arrangements have been made to cut the timber and deliver in the company's boom at Bridgeport.

THE plans for the Interstate Lumber Co.'s building at Meridian, Miss., have been completed. The building will be 560 feet long and will cover the entire space between the tracks of the Alabama Great Southern and Mobile & Ohio Railroads. Mr. Christopher Miller will have charge of the superstructure and has already received orders to commence work at once. Bids will be received for brick, lime, concrete, stone, etc.

MOBILE has already sent out 12,000,000 feet more of hewn lumber this season than last, and is ahead about 3,000,000 feet of sawed timber. In lumber this port is 6,000,000 feet ahead. Mobile has now shipped out 101,500,000 feet of stuff, as against 92,000,000 for the whole of last season, and has July and August yet to her credit.

THE South generally is showing a good deal of activity in the way of building new manufactories. Reports continue to come from every State south of the Ohio telling

of the undertaking of new saw mills, planing mills, bent wood works, box and wood-ware factories and wood novelty works generally. All this in the face of the poor cotton market of the past year and the high water and floods of the present speaks volumes for the spirit of progress which has taken possession of the entire South.—*Northwestern Lumberman.*

MESSRS. FREEMAN & BALKUMP, formerly of the Ariba Lumber Co., have purchased E. B. Waters & Co.'s mill at Cordele, Ga., and will operate it.

THE Wagar (Ala.) Lumber Co. has shut down its mill; operations will be resumed in thirty days.

GEORGE WOOLEVER has leased for a year the mill of the Osceola County Lumber Co. near Kissimmee, Fla.

THE Kildare Lumber Co., of Jefferson, Texas, has been chartered to succeed to the business of the Jefferson Lumber Co. Its capital is \$300,000.

MESSRS. THOMPSON & HODGSON have recently erected a shooik factory at Stephens, Ark., and are manufacturing for export. The plant has been in operation about three months, and has a capacity of about four cars of rum shooks per week.

THE Hitchcock-Trego Lumber, Land & Quarry Co. will soon have its new mill at Belfield, Va., completed, and it will have a daily capacity of 30,000 feet. Theo. S. Wilkin, of Milwaukee, Wis., is furnishing the mill machinery, and Jas. M. Link, of Norfolk, the shafting, pulleys, conveyors and boilers.

MESSRS. J. M. THRASH and C. E. Graham, of Asheville, N. C., have sold a large lot of poplar, ash, cherry and black walnut trees in Cherokee and Town counties, N. C., to J. F. Besby, C. H. Chatburn, J. F. Ball and Mr. Culbertson, of Minneapolis and Augusta, Minn. The purchasers will organize a company and erect mills near Murphy, N. C., for manufacturing the lumber.

THE London Board of Trade returns for the month of June, 1892, as reported by the *London Timber Trades Journal*, is as follows: Imports of lumber and timber from the United States, hewn and sawn, 374,742 loads, valued at £1,166,699, and for the corresponding month of 1891 319,257 loads, valued at £1,070,363.

THE exports of timber and lumber from Pensacola, Fla., to foreign ports during the month of June amounted in round numbers to 12,000,000 superficial feet of lumber, 21,000,000 superficial feet of sawn timber and 3,000,000 cubic feet of hewn timber, the total value of which was something like \$350,000. The shipments to domestic ports amounted to 3,000,000 superficial feet of lumber, valued at \$32,000.

MESSRS. WINEMAN BROS. have just completed a band saw mill at Tipton, Tenn. Its capacity is 30,000 feet daily, and is situated in a fine ash, oak and poplar section. The plant will start at its full capacity.

THE Hallum Lumber Co.'s lease on the planing mill of the Central Georgia Land & Lumber Co. at Sibley, Ga., has expired, and the latter company will continue its operation after extensive improvements have been made.

MCLEOD & YOUNG, of Mineola, Ga., whose plant has been shut down for several months on account of low prices, are about to commence sawing again.

G. W. TANCILL, of Prince William county, Va., has secured a sub contract from Philadelphia parties to supply the piles to be used in the construction of the foundation for the new postoffice building in Washington. About 5,000 piles, ranging from twenty to sixty feet in length, will be required, which will cost about \$16,000.

MR. THOMAS MILLER, of Florence, Ala., recently took to Mound City, Ill., by way of the Tennessee river, a raft of 304

poplar logs. The logs were brought from Elk river through the locks in small rafts, and after passing the bridge at Florence were formed into a raft 72x300 feet. Over 200,000 feet of lumber was contained in the raft.

MESSRS. FULLER BROS., of Marked Tree, Ark., whose mill was idle for some time on account of high water, have resumed operations.

JOHN FALKNER, of Campbellsville, Ky., has purchased about \$12,000 worth of timber at Four Mile from the Boreing-Moss Co. and intends to saw it. He has purchased E. Rice's saw mill and will move it to Four Mile for that purpose.

THE schooner Fannie Arthur arrived at Providence, R. I., July 9 with 608,000 feet of cypress. This cargo and the one on the schooner Plummer, of 700,000 feet of cypress, are the two largest cargoes of lumber ever received at this port. Both vessels were loaded by the Louisiana Cypress Lumber Co., of New Orleans.

THE lumber trade of Alexandria, Va., is growing rapidly, and not a day passes when there is not a vessel discharging or receiving cargo at the wharves. One firm has sold since the year set in 1,207,000 cypress and 300,000 white pine shingles, and others have shipped from forty to fifty vessel loads of lumber to points on the Chesapeake tributaries.

Electricity in Coal Mining.

The use of electricity in coal mining operations has been considerably discussed of late and the forms of machines for both mining and hauling fully described. Unfortunately the papers upon the subjects have treated almost entirely of the machines and their adaptability to the work, but few figures have been given showing the decreased cost of mining to the operator. That machines for coal cutting operated by electricity have rapidly increased in use is undoubtedly the case, and is clearly good evidence that they are found more satisfactory than hand labor, but how much more, what saving is obtained, is the vital question in the mind of the mine operator.

Of course each inventor considers his machine best adapted for general use and can figure to a nicety the amount of current required, how much it should cost and how the machine is to be handled, but it is the result of a year or more of actual work, meeting all kinds of unforeseen difficulties, that gives the results which are commercially valuable and to which the business man first looks in considering the advantages of the machine for his purpose. The increase in use of electric hauling and coal cutting machinery is an excellent evidence of their value, and the results from some few places tend to corroborate this. At one Pennsylvania mine a Thompson-Van Depoele machine undercuts from ninety to 100 tons of coal per day, requiring three men to look after it and move track, though they could do the same work for two machines. It is estimated that the total labor of cutting, breaking down and loading into cars does not exceed fourteen dollars per day, or fifteen and one-half cents per ton, against fifty-five cents per ton, which was previously paid for hand labor doing the same work.

Electric mining machines have not as yet been introduced in Southern coal mines to any great extent. One company has gone so far as to put in a pump operated by electricity, but the actual mining work, which represents the greater part of the cost, is still done by hand at prices ranging from forty-five cents to as high as eighty cents per ton.

In line with economies which are being adopted in the South, more scientific methods of mining, coal and ore washing, improved furnace work, etc., it is right that this means of reducing the cost of

mining coal should have both thought and trial, when it will undoubtedly be shown both better and cheaper than hand labor.

Origin of Egyptian Cotton.

The origin of the cultivation of the cotton plant which produces the present long-staple Egyptian cotton and which first became known in Egypt in the year 1821 was owing to the accidental discovery made by a French mechanician named Jumelle (in the service of the late Viceroy Mohammed Ali), who found this cotton plant (the *Gossypium herbaceum* of botanists) growing luxuriantly in the garden of Makoh Bey, in Cairo. This quality of cotton, subsequently cultivated in this country, accordingly took its name of Makoh, by which it became generally known in England, while in France it was generally called "Coton Jumelle," after the name of its discoverer. The pasha, on being informed by M. Jumelle of his having found this valuable description of cotton plant, and being made aware of the great benefit to be derived to this country from its extensive cultivation, readily appreciated the source of wealth it presented to him and immediately ordered as much of the seed as could be procured to be planted on his own lands.

The first crop of this new quality of cotton, grown in the years 1821-22, produced only 947 cantars, or about 845 cwt., but the cultivation of it very rapidly extended throughout the districts of Lower Egypt, where the soil and climate were found to be admirably adapted for its growth, as well as for the perennial preservation of the peculiar quality of fine long staple cotton which this cotton plant produced. The high prices which it brought for several years subsequently in the European markets naturally gave a great impulse to the exertions made by Mohammed Ali to extend the cultivation of this valuable product of the soil, of which he held at the time the exclusive monopoly both of this and of all other produce, and was, therefore, personally interested. He accordingly took the most active and energetic measures to encourage the cultivation of this cotton among the fellahs or cultivators in Lower Egypt; he caused to be distributed among them the seed of the new cotton plant, with which he commanded them to sow a certain quantity of land; he ordered, at the same time, many of those canals for irrigation which had been previously neglected and became, in consequence, filled by the deposition of mud from the Nile, to be cleaned out, so as to be made available for irrigating the cotton plantations during the low Nile, which was indispensably necessary for the growth of the plant during the summer months.

The result of his efforts in this direction was that a good deal of land previously unproductive for want of the necessary facilities for irrigation was cultivated and a yearly increasing extent of land planted with cotton, so that the quantity of it produced increased very rapidly, as may be seen from the total annual sales made and the average prices realized for it in Alexandria by the government during the succeeding seven years, which were an average of 144,528 cantars of ninety-four pounds net, at a price averaging 7d. per pound.—*Textile World*, London.

A Foolish Argument.

Mr. Henry M. Stanley, who has now become an English subject, has, it seems, been running for election to a seat in the English Parliament on the Tory side, and amongst other foolish things has been advancing some remarkably thin arguments against the 8 hour movement over there. As we understand the matter, an attempt is being made to enforce an 8 hour day over there by legislation, which,

we believe, is unwise; but such arguments as Stanley has been advancing will never make anyone see the unwisdom of it. He is reported to have said before an audience of working people that he "never would have accomplished what he has done in Africa if he had confined himself to eight hours labor per day." This form of argument is old, and entirely without applicability to the case.

Most great and famous men have been endowed with the power to work long hours. Stanley by doing this upon occasion has made himself famous, has become wealthy, married a wealthy woman, and can now, as indeed he has done in the past, give himself long vacations and complete rest, during which he need not worry about where his bread and butter is to come from. Because he has worked long hours in accomplishing this, does it follow that men whose lot it is to work in English factories and coal mines at monotonous, unvarying and hard, physical labor, not made lighter by hopes of any such rewards, shall make no effort to shorten their hours of labor and secure for themselves leisure to enjoy some of the good things provided for the inhabitants of this world?

John Ericsson was able to and did work long hours during most of his life, but his physical and mental powers of endurance were quite exceptional, besides which he had the inspiration that came of knowing that he worked for himself, and, when successful, added to his fame and often his income.

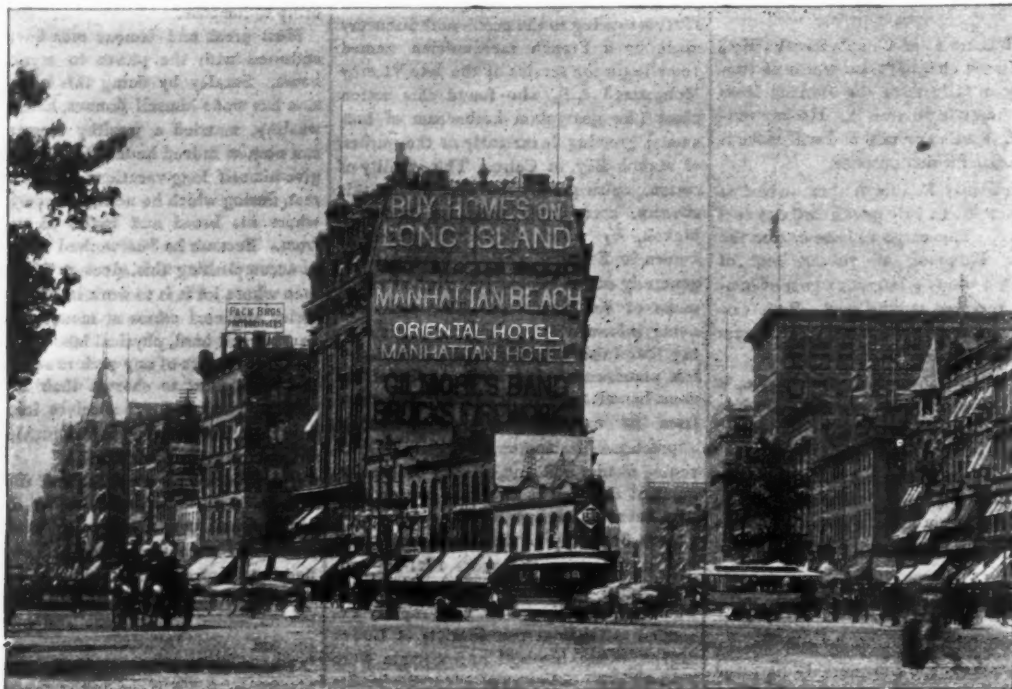
It must be obvious that his working long hours did not demonstrate that every draftsman or engineer should do the same, regardless of his own or of the average capacity for work, and of the reasonable prospects of reward for it. Eight hours per day has been demonstrated to be about all the average draftsman can really work, and except when each man can be so situated as to admit of his consulting his own feelings and disposition, the capacity and requirements of the average man must govern, not those of the exceptional or exceptionally circumstanced man.—*American Machinist.*

FIBRE REPORT No. 4, just issued by the United States Department of Agriculture, is a report on flax culture for fibre in the United States, and was prepared by Charles Richards Dodge, special agent in charge of fibre investigations. It contains a very full report on the field experiments made during the season of 1891, especially those conducted under the auspices of the experiment stations of several States, and a chapter on methods of culture, including preparation of the soil, quantity of seed sown, harvesting of the crop, etc., with instructions in regard to the retting and cleaning of flax. Mr. Eugene Bosse, a practical Belgian flax grower, now a citizen of the United States, who served for some time last year as a special agent of the department in the Northwest, contributes an interesting report on his observations in Wisconsin, Minnesota, Iowa and South Dakota, concluding with a special report on flax culture in Wisconsin and Minnesota. A chapter on flax culture in Ireland and Belgium is contributed by Mr. Henry Wallace, of Des Moines, Iowa. There is also a chapter on flax culture in Austria, and another on flax culture in Russia. Statistics of flax culture in the United States based upon the results of the eleventh census are included in an appendix. The publication will be mailed to those applying for it to the Secretary of Agriculture, Washington, D. C.

THE Gracey-Woodward Iron Co., at Clarksville, Tenn., has started the fires in its new coke furnace to dry it out and get it ready for blowing in. The furnace, which was only completed recently, is seventy by seventeen feet, and has an estimated annual capacity of 40,000 net tons.

A Novel Illuminated Sign.

Austin Corbin has resorted to a unique method of attracting attention to Manhattan Beach by means of an illuminated sign which was made for the purpose by the General Electric Co. On the corner block on 23d street, New York city,



A NOVEL ILLUMINATED SIGN.

formed by the confluence of Broadway and Fifth avenue, stands a small building, behind which rises a huge overtowering structure, nine stories high, exposing a plentiful surface of blank wall over the top of its dwarf neighbors. This surface, sixty feet wide by sixty-eight feet high, has for the past few evenings been the cynosure of the eyes of everybody coming down Broadway or Fifth avenue, or walking east or west along 23d street. Upon the surface of this wall is erected perhaps the largest illuminated sign in the world, and certainly the largest and most conspicuous electrically illuminated sign. By means of this sign Mr. Corbin brings on these hot days to the attention of a sweltering public the fact that the Coney Island of the well-to-do Manhattan Beach is swept by ocean breezes, and emphasizes the various other special attractions to be found at that well-known pleasure resort.

In this sign there are 107 letters, some six feet, some four feet and some three feet high, each one of which is in reality a box of galvanized iron. In the interior of these boxes, arranged in the outline of the letters, are a number of small Edison porcelain series plug cut-outs which are here used as lamp receptacles. At the lower end of each letter is a small sliding door, giving access to a plug cut-out which serves to protect the lamps in that letter. Each letter is suspended and clasped top and bottom to two iron rods formed of strong steam piping, which are securely attached to the wall by expansion bolts.

The illumination of the sign is obtained by the use of no less than 1,457 sixteen candle-power Edison lamps of different colors—white frosted, red, blue and green. The current is taken from the mains of the Edison Electric Illuminating Co. There are seven sentences, each of which is on a separate and distinct circuit controlled by a lever switch. The switches are arranged temporarily on a rough wooden frame, and as the primary object of the sign is to keep the different sentences constantly appearing and vanishing, the operator is in a state of constant agitation from dusk until 11 o'clock at night, when all the circuits are

opened and the brilliancy extinguished. It is a strange fact, but true, that so long as the charges are being rung the public is attracted and stands agape watching the sign, but so soon as the whole seven sentences are lighted and allowed to remain so, the people move on their way and the crowd disperses.

From the switchboard along the roof of the smaller building the line is led to the base of the wall, whence the different wires shoot up into the air to their respective sentences.

At the end of each line is a small platform and between each line a long rod of bicycle steel, each fastened securely to the wall, as are the letter supports, by expansion bolts. A flying ladder eight feet long, with small wheels, fits top and bottom to two of these rods and enables the attendant to run himself along each line and replace any broken or burnt-out lamps or blown fuses in a very few minutes.

As an additional protection to the wires outside they are run through conduit tubes thoroughly taped at their junctures and are carried up the wall on porcelain insulators.

The great difficulty with this sign, as in the case of all outside electric lighting work, lay in preventing the deleterious effects of rain and moisture. This has been overcome by fastening to the galvanized iron box letter covers over each hole, through which the lamps are thrust into the receptacles, small pent-houses of iron which project out over the lamps, and carry off the rain, without interfering in any way with the effect of the sign. Any rain which might collect on the lamp surface is prevented from running down into the receptacle by a small projecting brass ring fastened to the outside of the lamp near the screw shell.

Each sentence is painted a different color, so that during the day the only thing lacking is the brilliancy of the illumination.

The entire work on this was completed in about fifty days. It was signed by and constructed under the supervision of Mr. F. R. Upton, Mr. A. D. Page and Mr. McAllister, of the lamp works of the General Electric Co., Mr. Corbin having practically given them carte blanche.

THE employees of the Lookout Rolling Mill at Harriman, Tenn., have made a demand for a better scale of wages on perhaps 200 items of iron work. They belong to the Amalgamated Association,

The Hackney Power Hammer.

The accompanying illustrations show a new power hammer made by the Hackney Hammer Co., of Cleveland, Ohio. The special point of interest in the new machine is the improvement in the brake mechanism, which changes the design in

larger sizes of hammers only, though the mechanism and method of working are practically the same in each style. At the top of the standards there is a forged steel crank-shaft working in bearings of phosphor bronze, one on each side of the crank. The crank works in a yoke having a sliding box of phosphor bronze, this yoke being attached directly to the air cylinder below, which is thus given a vertical reciprocating motion in the slides formed in the standards. Within this cylinder is a piston which, by the usual rod, is attached to the hammer head, the air, more or less of which is confined above and below the piston, serving to transmit motion to it and to cushion it at the end of each stroke.

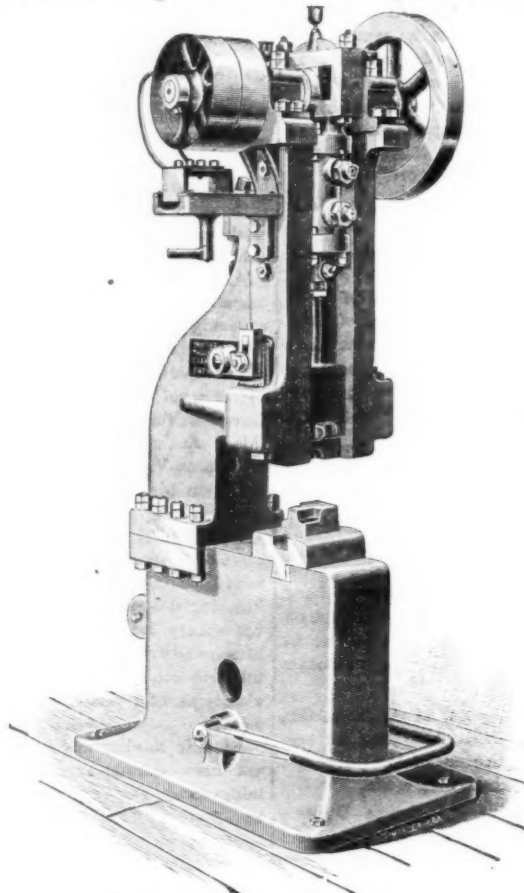
The admission and confinement of air in the cylinder is controlled by valves, which may be worked by hand or foot, as is most convenient. In the larger sizes of hammers there are four valves, two being merely admission valves, which admit air to supply the place of what may be lost in case there is any leakage. This, of course, they accomplish automatically and at each stroke, so that any reasonable amount of leakage does not interfere with the working of the hammer, and the piston and stuffing-box need not be so tight as to interfere with free working. The valves at the back of the cylinder are the ones by which the motion of the hammer is controlled, these valves being opened and closed by means of a sliding wedge which is connected to the system of levers before referred to. These valves open in reverse directions, so that when one of them is opened by the wedge the other is closed.

The motion of the hammer is considerably greater than that of the cylinder, and the action of the valves is so prompt and certain that a single blow can be delivered with the maximum force, and the hammer will be arrested and held at the upper end of the stroke by a brake provided for that purpose, which is controlled by the same lever that operates the valves. This en-

particular of their double standard hammer.

There is now greater leverage obtained in operating the brake, making the hammer work much easier, either by hand or foot, than formerly.

Two different styles of the hammer are shown by the cuts, the single and the



SINGLE STANDARD HACKNEY HAMMER.

double standard, the latter with foot treadle attachment only, although the hand lever may be attached and either that or the foot treadle, or both, used.

The double standard is adopted for the

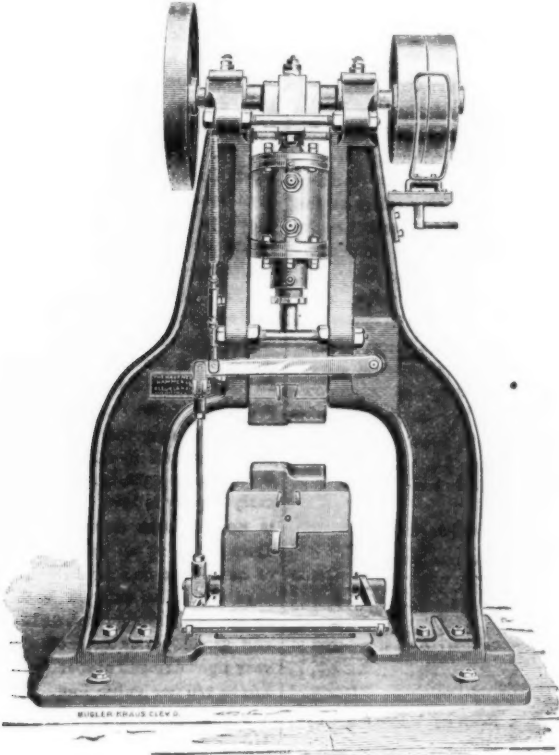
ables the hammer to be used for drop forging simply by putting in suitable dies for that purpose, and without any other special preparation whatever.

The guides for the cylinder and hammer

head are adjustable for wear, and can easily be replaced. In the smaller sizes the lower part of the hammer, upon which the die block rests, is made separately, so that it may be easily renewed in case of breakage, while all the larger sizes have separate anvil blocks, which are arranged to rest upon their own foundation.

As stated, the method adopted in the manufacture of these hammers is such as

the small lock full size, being sold largely for bicycle use. This size weighs full one ounce, and over 100 changes of key are available. A larger size is made, weighing full four ounces, with over 200 changes of key available. Every part is well made of the best materials, and the finish is excellent. These locks are of a design, weight and size that adapt them to many uses.



DOUBLE STANDARD HACKNEY HAMMER.

ought to, and, we believe, does, secure workmanship of the best character, with all the advantages of interchangeable parts, which can be supplied at short notice. They are regularly built in six sizes, ranging from fifty to 500 pounds, the nominal size of the hammer being the weight of the head, rod and piston. The 50-pound hammer weighs 2,500 pounds, stands six feet two inches high over all, has seven inches travel of head, uses dies five and a-half inches long, is driven by a 3½-inch belt running on a 10-inch pulley, and will deliver 350 to 380 blows per minute. The 500-pound hammer weighs 14,000 pounds, stands eight feet five inches high over all, has fourteen inches travel of head, uses dies fourteen inches long, is driven by a belt five inches wide running on a pulley twenty-four inches diameter, and can strike 200 to 250 blows per minute.

A New Automatic Padlock.

The Miller Lock Company, of Philadelphia, has brought out a new four-lever



A NEW AUTOMATIC PADLOCK.

automatic padlock which possesses some novel and useful features. The cut shows

Notes on Machine Shop Practice.

By Albert D. Pentz.

WHEN a shape cut is taken on a milling machine, and the piece being cut has a side that is already machined by which it is adjusted within the holding fixture and to which side the present operation has working relations, care must continually be had to keep these cuts in proper positions, the new one to the older one. This caution at first seems so obvious that it may be thought to be superfluous, but, in fact, ten minutes after the machine has been got in working order and the gauges show it to be doing good work, it often is found that the position of the new cut has shifted and must be readjusted. After readjustment, however, the work will be good during the remainder of the session. But again, when the machine has been stopped at noon or at night, the work will be found to be bad again at starting. This defect is due to expansions by heat, which elongate the cutters and the arbor, and in a lesser degree change the relations in the body of the machine between the holding fixture and the cutters.

THE angular side of the teeth of milling cutters for finished cuts should be ground off when the backing to the edges get to be too broad from continued grinding. The process is analogous to that of "gumming" a saw, but it is for a different general purpose. A saw is gummed to prevent it choking with its cuttings, while the spaces in a milling cutter are ground out, not for that purpose alone, but in addition to prevent loose chips from scratching the finished cut. In grinding a milling cutter to sharpen it quite a small emery wheel generally is used, resulting, of course, in a concave backing to the edge. If this backing be wide it will be a shallow groove, but still will have its back edge sufficiently prominent to drag forward a chip that has been caught and part

of it cut off by the edge. It will be seen that such a chip will be forced partly to cut into the metal being machined and partly to be itself crushed by the cutter tooth as it passes under the arbor, and thus mar the surface being cut. Hence there should be no more backing left behind the edges on the teeth of a mill than is necessary to give them strength to do their work.

SHOULD the teeth on any cylindrical mill be drawn on an enlarged scale it will be apparent that they can be backed off by the rim of a "tub" wheel quite as well as by the circumference of an ordinary cutter grinding wheel, and still grind across the cutting edge and not lengthwise with it. A machine to grind cutters thus would be but slightly different from the regular grinder, if, in fact, such a wheel could not be used on the machines usually employed. The backing behind the edges of the teeth would thus be flat surfaces, or nearly flat, the cutting edges would last longer and not have the tendency to drag entangled chips.

A POCKET-BOOK of tables and formulas for mechanical engineers certainly is needed. The tables should comprise the areas of all kinds of regular sections and the volumes of all geometrical bodies that are likely to be used in machine design. The writer recently had occasion to specify a sphere having a prescribed volume, and he was unable to find a table that gave him data of any value whatever. One book has a table of the volumes of a few spheres, but even these are in eighths, sixteenths, etc., and are clumsy to use. I presume all such tables have been calculated, but they should all be compiled into one text book. A busy man has not the time to compute and verify every factor in a design or to search through many volumes for the tables he needs. They all should be within the same book. There is much trash put into some books of data which has no technical value whatever, but which makes them bulky as well as expensive.

DON'T let any machinist get the idea that the genius to design or "get up" new mechanical devices requires any peculiar mental faculty other than the ability to think clearly. The man who considers himself a freak of nature just because he has made an invention, and has got a patent for it, is, in so far, an ass. It is safe to say that as many young men have been permanently injured by their "genius," as their mothers have seen it, as have been ruined by whiskey. There is no such thing as the popular idea conceives genius to be. There is nothing to it but a clear comprehension of the needs of the case, a knowledge of the art to which the invention belongs and hard work. A Western railroad magnate, who had appropriated an invention, declared that there should be no such things as patents at all, because "an American inventor cannot help inventing, and as many inventions would be made without patents as with them." He, however, admitted that he had never invented anything, and his idea of the process seemed, as nearly as could be discovered, to be that an invention came into being by an inspirational explosion in the brain of a peculiar kind of being known as an inventor. Now this idea that an inventor is a special creation is fostered by some designers who otherwise are very sensible men, but such an idea always works to the disadvantage of the inventor. It may be that there are those who envy or respect this type of being, but such devotees are never in positions to be of help to him. On the contrary, those who thus believe, and who also are able to help him and be helped themselves as well, generally take the thrifty view that such inspirations are common property, being providential, and therefore do not belong to the inventor any more than to anyone else. It will

only be after inventors have shown that their productions are the result alone of hard work that they will command the respect of worldly business men for their creations, and when inventors maintain and demonstrate that their work is only the concrete embodiment of labor, the same as money is, that such property will take its true commercial place in the understanding of intelligent people. Then it will cease to be popularly considered as a happy-go lucky kind of merchandise which is everybody's oyster, as at present it is thought to be.

SOME drill presses are worse than others in the matter of the rigidity of the table and the possibility of keeping it as square with the spindle under a heavy strain as under a light one or none. One or two press makers have produced devices to support the table from beneath, and in that particular they do fairly well. The difficulty, however, is not there to so great an extent as in the cylindrical column and other parts that connect the drilling spindle to the table supports. These connections spring backward when the stress of the feed is put upon the point of the drill, because the whole support in these connections is situated at one side. In some cases the spindle will be out of square with the table one-eighth of an inch in the foot, where the drill is large and the feed is fast. If the spindle could be evenly supported from both sides of the table this defect would be overcome. This kind of support is possible with an arched beam carrying the spindle and driving gear, the beam to be supported on two columns placed diametrically opposite each other through the spindle as a center and attached to the bed at the bottom. In this direction is the drill press which is supported entirely from the ceiling, leaving the whole floor beneath it clear of all obstructions. This is an excellent arrangement where the ceiling is strong enough to withstand the strains without deflection. Designers of new drill presses should bear in mind the defects of present patterns and offer their customers tools that overcome them efficiently and by good mechanical constructions.

If the spindle in the headstock of a lathe is not parallel with the shears the resulting disadvantage is that a straight hole cannot be bored in the usual way within a piece of work fastened on the face-plate; neither can a plane be faced on it if the cross-feed is correctly adjusted in relation to the shears. If this spindle pitches upward or downward and is highest or lowest on the face-plate end, the fault is much smaller in practice than where it has either a backward or forward horizontal inclination. If the inclination be backward the hole will be largest on the outer end, and vice versa. A hole generally is more acceptable if it be large on the entrance end than if too small at that place and larger within. The tendency of ordinary lathes is to wear this spindle to a backward inclination. The upward and downward wear is corrected to a great extent by repairing the upper half of the box, as no wear of much consequence occurs downward. A slight variation from parallel truth in an engine lathe headstock spindle should not be considered as a great imperfection unless the lathe is to largely be used for boring. In turning between centres a small defect of this kind will not have an appreciable effect on the quality of the most exacting job that can be imagined.

A PROMINENT railroad man in Georgia has 115 acres of land planted with water-melons. During past years he has shipped from twenty to thirty carloads per year, netting him between \$120 and \$150 per car. This season it is estimated that his entire crop will bring a return of nearly \$4,000.

XUM

SHINGLES.	
Cypress, No. 1 hearts, sawed, 6x20...	\$7 50@7 75
No. 1 saps, sawed, 6x20...	5 50@6 25
No. 1 hearts, shaved, 6x20...	5 50@7 00
No. 1 saps, shaved, 6x20...	5 00@5 50
LATHS.	
White pine...	\$2 85@3 00
Spruce...	2 40@2 40
Cypress...	2 00@2 15

New York.

OFFICE OF MANUFACTURERS' RECORD,
No. 126 Liberty Street,
New York, July 20.

Yesterday the board of walking delegates ordered on strike all the men employed in the Havemeyer building at Cortlandt street and the Metropolitan Life Insurance building at 23d street. This has turned 700 men out of employment, and the delegates say that this will be increased to at least 10,000 before the end of the week. About three weeks ago the cabinet-makers went on a strike; 11,000 men went out. The bosses held out and the men gave in and have applied for work, but only 250 of them have been reinstated, simply because as they went out and closed up the shops work was diverted from this city to Philadelphia, Western and other points, and the result is that now while the men are willing to work there is no work for them. Having been driven out of town to supply their wants it is a question how easy it may be to get the consumers of trim and cabinet work back to New York with their orders. There may be something in the price of Western stock or stock manufactured outside of New York that will make it an object for them to continue giving their orders out of town. This no one can tell. The future alone will reveal the fact. With these conditions confronting us there is nothing encouraging to write about. Trade is dull. There is no immediate prospect of improvement.

Yellow pine continues to be in bad condition. Orders are being taken at any price almost that can be obtained regardless of values. We understand that the Yellow Pine Co. is taking most of the orders coming out at this time. For the present our quotations will stand, although they are to be considered as merely nominal.

Building orders, 12 in. and under...	\$19 00@20 00
14 in. and up...	19 00@20 00
Yard orders, random...	17 00@18 00
Ship stock, 4 ft. average...	23 00@23 00
Heart face siding, 1 and 1 1/2 in...	18 00@19 00
1 inch wide boards...	21 00@
1/2 and 3/4 in h wide boards...	22 00@
Kiln-dried s.p. swing...	15 00@16 00
Kiln-dried floor, rough cargo lot...	35 00@38 00
1 tongue and grooved, in carload lots...	40 00@

North Carolina pine is dull. We understand that stocks are accumulating in the South, but as the North Carolina pine people have a perfect organization, we do not anticipate any break in prices. This shows what organization will do.

Cypress continues about the same as last stated.

SOUTHERN HARDWOODS.

There is nothing new in the hardwood trade, and the situation remains practically as was last stated.

Quartered oak goes in small quantities, but no very large orders are being placed. Plain oak, too, is in some demand. Good dry stock finds buyers. Quotations remain unchanged.

1x6 inch and up...	\$49 00@50 00
Thicker...	50 00@53 00
Common...	35 00@38 00

Plain oak is in demand for good lumber.

1x8 inch and up...	\$35 00@36 00
1 1/2 and 2 inch and up...	37 00@40 00
2 1/2, 3 and 4 inch...	38 00@41 00
Common...	22 00@24 00
Balusters...	22 00@26 00

Nothing new can be said of ash. Good lumber meets with some sale.

1 inch...	\$35 00@37 00
1 1/2, 2 and 3 inch...	37 00@40 00
2 1/2, 3 and 4 inch...	38 00@41 00
Common...	22 00@24 00
Balusters...	22 00@26 00

Other hardwoods show no practical change; all are in more or less demand, but nothing is active. Everyone is hoping that the fall will show an increased activity, and this we are sure will be the wish of all who read this article.

Norfolk.

[From our own Correspondent.]

NORFOLK, VA., July 20.

The activity noted last week in local and outlying points still continues, and in all branches of the lumber trade there is a most encouraging outlook. All the mills are fully employed, and many new plants are about to be completed, while the demand is very general and prices for all dimensions of good manufactured lumber are firm and hardening. This is especially true of Virginia and North Carolina kiln-dried lumber, which is in active demand at full values and the price-list well maintained. Stocks are reported light for this period of the season, and the supply of logs fully ample for the strong mill demand. Air-dried boards are showing up a little better; the receipts are, however, large, and the demand is not what it should be on account of labor disturbances at Baltimore; these, however, are partially settled, and a better feeling in this branch of the trade is looked for. There is a fair activity among planing mills, and both here and at other points considerable business is in progress; prices are, however, irregular, and concessions are often made to close contracts. There is a good inquiry for cypress, with stocks light and prices steady. Shingles are in good request, while the supply is limited on certain grades and prices are fairly steady. The following list represents the prices current at this date:

The receipts of lumber and timber at the port of Norfolk, Va., for the six months ending June 31, 1892, as furnished by Samuel P. Borum, secretary of the Norfolk Chamber of Commerce, are given as follows: Lumber 129,992,048 feet, logs 10,560,094 feet, staves 3,273,788, shingles 17,963,221 and railroad ties 85,730.

Kiln dried North Carolina pine lumber f. o. b. at this port is quoted as follows:

5-4 rift No. 1...	\$27 50@
5-4 rift No. 2...	16 00@
5-4x10 No. 1...	19 00@
5-4x12 No. 1...	19 50@
5-4x10 No. 2...	15 00@
5-4x12 No. 2...	15 50@
5-4 edge No. 1...	17 00@
5-4 edge No. 2...	13 50@
4-4 rift No. 1...	25 00@
4-4 rift No. 2...	15 00@
4-4x10 No. 1...	18 00@
4-4x12 No. 1...	18 00@
4-4x10 No. 2...	14 00@
4-4x12 No. 2...	15 00@
4-4 edge No. 3...	9 50@
5-4 edge No. 3...	10 50@
4-4x8, 10 and 12 culls or box...	8 50@10 50
4-4x5-4 edge, culls or box...	8 00@8 50

VIRGINIA PINE.

4-4 flooring boards (dry and clear)...	\$13 00@14 00
4-4 flooring boards (rough)...	7 50@8 50
SHINGLES.	
No. 1 hearts, split, car lots...	\$ 6 50@7 00
No. 2 hearts, split, car lots...	5 50@6 00
No. 1 saps, split, car lots...	4 50@5 25
No. 2 saps, split, car lots...	4 00@4 75
No. 1 sawed hearts, car lots...	6 50@7 00
No. 2 sawed hearts, car lots...	5 00@5 50

WOOD.

Hard, per cord...	\$ 2 75@3 00
Pine, per cord...	2 75@3 00
STAVES.	
Red oak hoghead, prime...	\$30 00@33 00
Red oak hoghead, culls...	20 00@
White oak hoghead, prime...	58 00@
White oak hoghead, culls...	31 00@
White oak heading, prime...	60 00@
White oak heading, culls...	28 00@

Savannah.

[From our own Correspondent.]

SAVANNAH, GA., July 19.

The volume of trade during the week has been light, but the general tone of the lumber market is very healthy. Milling operations in the interior have been somewhat retarded by the inclemency of the weather, and some mills are reported as shut down. The output, however, will not be lessened, as many new mills are being started. There is every prospect of a good season's business, and prices are generally steady for all dimensions of good manufactured lumber. Among the changes in milling circles are the following: E. B. Waters & Co., of Cordele, Ga., have sold their mill to Freeman & Balkeamp, formerly of the Arita Lumber Co.; J. C. Thompson, of the Quitman Lumber Co., has sold his interest to his partners in the concern; the mill of McLeod & Young at Mineola, Ga., is expected to start up during the current month, and Capt. S. R. Weston, of West-

onia, Ga., reports that his new mill will be in operation during the latter part of August. The list of values in the local market is unchanged. The exports from this port for the past week were 2,268,900 feet of lumber, 29,000 shingles, 8,000 staves and 192,384 cross-ties. Freight rates are unchanged, while there is a good offering of tonnage. Sail rates coastwise from this port are steady at \$4.25 to \$5.00 for a range including Baltimore and Portland, Me. Steamer rates to New York are quoted at \$7.00, Philadelphia and Boston \$8.00, and Baltimore \$6.50 per ton.

Charleston.

[From our own Correspondent.]

CHARLESTON, S. C., July 19.

The tone of affairs in lumber circles at this point is quiet, with very little change to note from that reported a week ago. The export demand is light, and very few shipments reported for the week. Values continue very steady for all dimensions of choice stuff, and under a light inquiry no increase of business can be expected. In the list of values no material changes are reported. Merchantable city sawed lumber is quoted at \$14.00 to \$16.00 and railroad at \$12.00 to \$14.00 per thousand feet. Square and round timber is steady at \$9.00 to \$13.00 for railroad and \$8.00 to \$11.00 for raft. Dock timber is firm at \$4.50 to \$6.50 and shipping \$8.50 to \$10.50. Shingles are steady, with a fair inquiry at \$5.00 to \$7.00 per thousand as to quality and condition.

EXPORTS OF LUMBER FROM CHARLESTON FROM SEPTEMBER 1, 1891, TO JULY 15, 1892.

Exported to	1891-'92. Feet.	1890-'91. Feet.
New York...	27,891,378	21,102,915
Boston...	25,000	25,000
Philadelphia...	6,412,000	5,317,000
Baltimore...	2,408,778	2,260,900
Other United States ports...	4,411,009	7,583,311
Total coastwise...	41,653,365	36,515,186
Grest Britain...		
Palermo...		
France...		
West Indies...	1,962,300	4,946,795
South America...	177,000	540,410
Nova Scotia...		
Other foreign ports...	578,174	
Total foreign...	2,717,474	5,487,205
Grand total...	43,962,539	42,002,391

Mobile.

[From our own Correspondent.]

MOBILE, ALA., July 19.

A cheerful tone seems to prevail in local lumber circles and prices during the week have shown a hardening tendency, while the value of business was quite limited in character. The difficulty in resuscitating the South American trade has been partially overcome, and the prospect of an early resumption of business with the Latin republics has caused an advance in values. A steamer has been chartered to carry a cargo of lumber to a South American port, and the contract price is said to leave a margin of profit. Sawed timber is nominally steady, while hewn stuff is advanced one cent per cubic foot, and contracts for next season are being made on a basis of 12 to 13 cents. The mills are well supplied with logs, rains having been prevalent in the interior, and waterways are all at a good height. Cypress is quite firm at 6 and 6 cents, with every prospect of a further advance, the demand being more decided. The exports of lumber during the past week were 700,000 feet, and since September 1, 1891, they aggregate 54,291,995 feet. The exports of hewn timber for the same period is 2,591,181 cubic feet and of sawn timber 1,974,264 cubic feet. The total shipments of the port for three months ending June 31st aggregate 102,600,000 feet of stuff, against 92,000,000 for the year of 1890-91, and the receipts of July and August yet to her credit. Business at Pensacola is showing up very favorably, and the business of the current month has been very extensive.

Values at this point are very firm, and trade so far during the season has been above the average. There is some business doing with South American ports, but shippers are cautious and only make contracts when they are certain of paying returns. The business of this port for the month of June amounted to 12,000,000 feet of lumber, 21,000,000 feet of sawed timber and 3,000,000 cubic feet of hewn timber. Shipments to coastwise ports were 3,520,000 feet of lumber valued at \$32,000. Mr. Thos. C. Watson, secretary of the Chamber of Commerce of Pensacola, furnishes the exports for the five months ending May 31st as follows: 4,486,500 superficial feet hewn timber, 9,615,000 superficial feet sawn timber and 50,151,000 superficial feet of lumber, making a total of 149,252,500 superficial feet exported.

Memphis.

[From our own Correspondent.]

MEMPHIS, TENN., July 19.

Business is steadily improving, notwithstanding the continued rains and discouraging crop prospects throughout the Memphis territory. Local is very nearly up to the average at this season of the year, and shipping trade is better in all directions and grades. The scarcity of dry stock continues, as the sales are nearly equal to the output, and there is no opportunity to accumulate stock.

The crop prospects are not as encouraging as they should be, and all business is more or less affected thereby. There will be quite a perceptible reduction in available acreage, and therefore better prices are hoped for; and, too, this crop will be raised and placed on the market at much less cost than ever before—less even than last season—so that the net result will be better than the last.

There have some fine contracts for export oak and ash lumber and timber been placed here during the past few days. At the present rates of freight there is more money in shipping to Europe than to Texas and Southwestern points.

The local rates on rough lumber and material still continue to hold unprofitably low, but there are no changes in shipping quotations, nor is there any prospect for any for a long while to come. Prices are stiff and well maintained, but dealers do not look for any present advance, although the prices for dry hardwood of the upper grades are much too low.

The following are the current wholesale quotations:

BLACK WALNUT.	
1st and 2d, 1 1/2 and 2 inch...	\$65 00@70 00
Common...	31 50@40 00
Counter tops...	90 00@110 00
ASH.	
1st and 2d clear, 1 to 4 inch...	24 00@30 00
Common...	12 00@14 00
CYPRESS.	
1-inch, 1st and 2d clear...	22 00@24 00
1 1/2 and 2 inch...	24 00@26 00
Fencing 1x6, 16 feet...	15 00@16 00
POPLAR.	
1-inch, 1st and 2d clear...	24 00@26 00
1 1/2 and 2-inch 1st and 2d clear...	26 00@28 00
Common boards...	14 00@16 00
Dressed, 1 1/2 & 2-in., 1st & 2d clear...	28 00@30 00
Common dressed, 1-inch...	16 00@17 50
Squares...	24 50@26 00
COTTONWOOD.	
1 to 3-inch mill run, culls out...	9 00@12 00
Squares...	12 50@16 00
RED GUM.	
1st and 2d...	16 00@20 00
Common and culls...	8 00@10 00
OAK.	
1 to 4-inch, 1st and 2d...	24 00@26 00
Common, 1 and 2 inch...	13 00@15 00
Quarter oak, 1 inch, 1st and 2d...	30 00@32 00
Quarter oak, 1 1/2-inch and up...	34 00@36 00
White ft higher...	
YELLOW PINE.	
1st and 2d, 1 1/2 and 2-inch...	18 00@20 00
Dressed...	25 00@30 00
Flooring, 5 and 6 d and m...	17 50@
Flooring, 3 and 4 d and m...	17 50@20 00
2d flooring...	15 00@17 50
Heart step lumber...	27 50@
Ceiling, 1st and 2d, 1/2, 3/4 and 1...	17 50@20 00
Ceiling, 1st and 2d, 1/2 and 3/4...	16 00@
Common f. o. b. Memphis...	
Car lots...	12 50@
TIMBER (LOGS).	
Poplar...	6 00@10 00
Cypress...	6 00@9 00
Cottonwood...	3 00@4 00
Gum...	4 00@4 50
Oak...	6 00@12 00
Ash...	8 00@13 00
Black walnut...	15 00@50 00
SHINGLES.	
No. 1 heart cypress, 16 inch...	3 00@
No. 1 sap, 16 inch...	2 25@
LATH.	
Poplar...	2 00@2 75
Cypress...	2 00@2 50
Pine...	2 00@

Chattanooga.

[From our own Correspondent.]

CHATTANOOGA, TENN., July 18.

The lumber market continues fair, with a disposition on part of buyers to place larger orders. Eastern and Northern parties are inquiring for prices on hardwoods, notably white oak, and several very large contracts have been made for Eastern shipment of the last-mentioned wood. Prices remain unchanged as follows:

Yellow pine framing up to 26 ft. long.	\$10 00
Flooring, standard.	15 00
Celling, standard.	13 50
White oak, log run.	13 00
Poplar, 1st and 2d.	22 00

Beaumont, Texas.

BEAUMONT, TEXAS, July 19.

All indications point to a continued season of activity in the lumber trade throughout this section, and at this particular depot an immense trade is likely to be reported for the current year. The lumber interests of Beaumont and adjoining territory have been pretty generally written up and cleverly illustrated. Something new, however, is furnished from week to week, and under the activity in progress much interesting matter relative to the lumber industry is cropping up at all prominent points. The demand has continued to increase both from State and points in the Northwest, and stocks are becoming depleted, orders in some instances being difficult to fill. The *Journal* of the 15th, in reviewing the lumber trade, says: "The good trade of a few weeks back has reached the better degree, and it may be said a few of the mills are experiencing some difficulty in filling orders, owing to broken stocks. Texas, which for a year or more has been a niggardly buyer, is waking up, and a fair proportion of the orders now coming in are from dealers in the State. Kansas, Nebraska, Colorado and other States continue to send forward their orders, and there is not much haggling about prices, the list naming the figures." During the past week there has been a continued influx of orders for railroad timber, and nearly all mills have more or less orders of this description. There is an active demand for shingles, and the market is kept pretty well cleared of stock, shipments occurring as fast as they are ready for market. At Orange, Westlake and Lake Charles, La., the same activity is present, and the improvement in lumber throughout the saw-mill section of Sabine river and the passes is general. The completion of the Kansas City, Watkins & Gulf Railway will be of vast benefit to the entire section. The road is being completed from Lake Charles to Calcasieu Pass, and from that point there will be direct communication with St. Louis. There is a good demand from all points throughout the State, and prices at Orange and Lake Charles are very firm, while there is a report of a near advance of fifty cents. There is a good demand for shingles, and the supply is quite depleted, with prices firm and hardening. Manufacturers in some cases find it difficult to supply the active inquiry.

THE Woodstock Iron Co. held its meeting on July 15 to consider plans for reorganization. Stock to about 18,000 shares was represented, and nearly all voted to adopt the reorganization plan as proposed by the committee some time ago. Two-thirds of the stock not being represented as required under the law, the meeting adjourned until the 29th instant, when the reorganization will doubtless be perfected.

THE Augusta Mining & Investment Co., of Cedartown, Ga., is opening an iron mine near Rowell, Ala., on the East & West Railroad. A railroad to the mine is about completed.

THE Tennessee Coal, Iron & Railway Co. has called a meeting of stockholders for August 8th to ratify the purchase of the Aldrick coal properties.

GENERAL NOTES.

Brief Mention of Various Matters of Current Interest.

THE first bale of cotton for the season 1892-93 has been received in Houston, Texas. It weighed 520 pounds, and, according to the old custom, was put up at auction and finally sold for \$110, the proceeds being donated to the Orphans' Home.

AT a recent meeting of the directors of the Chattanooga Steamboat Co. it was reported that the affairs of the company were in excellent condition. The last trip of the steamer Herbert is said to have been particularly satisfactory, about 1,000 tons of freight being handled on the outward and inward trips. The rates charged are from 30 to 60 per cent. less than those given by the railroads. It has been decided not to attempt any more trips until high water in the fall, by which time a new boat and some barges will be added to the line.

ON the 8th instant a number of the leading financial and manufacturing gentlemen of Brinkley, Ark., formed the Brinkley Real Estate & Investment Co. Their principal objects are to develop the natural resources of Brinkley and to lay before manufacturers in general the railroad facilities Brinkley has and the inducements they will offer. The following officers were elected: President, T. H. Jackson, the initial member of the firm of T. H. Jackson & Co.; vice-president, H. H. Myers, secretary and general manager of the Brinkley Car Works & Manufacturing Co.; secretary, J. J. McNally, of the Arkansas Cotton Oil Co.; treasurer, C. B. LaBelle, cashier of the Monroe County Bank; solicitor, W. S. McCullough, capitalist. These men are men of push and energy, and there is reason to believe they will be a potent factor in having Brinkley keep pace with its opportunities. Brinkley has four railroads, and two more are in course of construction. The population is 2,500.

THE truckers of Charleston, S. C., and vicinity organized the Truck Farmers' Association last week, electing W. D. Lawton, president, and E. B. Gadsden, secretary.

A CONTRACT has been signed with steamship owners which insures the arrival of about fifteen large European steamers at Velasco, Texas, between September of this year and March, 1893. Liverpool, Bremen and New Orleans parties are interested, and expect to ship a large amount of cotton from this port to both Liverpool and Bremen.

L. R. WAESCHE, of Mechanicstown, Md., has made a number of leases of iron ore lands in the vicinity of Middletown in the name of Jacob H. Taylor, a well-known Baltimore capitalist. The belt of land on which the ore is found extends from near Jefferson in a northeasterly direction to the "High Knob," a distance of about seven miles, and passes but a short distance east of Middletown. Of this belt the present lease takes in about 1,500 acres of land and covers a distance of over four miles. The specimens of ore found contains 67 to 68 per cent. of metallic iron, a very low percentage of silica and but a trace of phosphorus. The leases carry with them the agreement to begin prospecting at once, and if the ore is found in paying quantities the mine will prove to be one of the most valuable in the country, and will be the means of building the long needed railroad into the valley.

THE Virginia Paving & Construction Co., to which a charter has just been granted at Roanoke, Va., has organized with I. H. Adams, president; J. E. M. Hanckel, vice-president; J. G. Payne, treasurer, and J. A. Gillespie, secretary and general man-

ager. The company handles exclusively the Chilhowie vitrified paving brick and diamond-cut sidewalk brick, using same in the construction of streets and sidewalks. It now has contracts from Roanoke and Lynchburg aggregating 60,000 square yards. The brick is made by the Virginia Vitrified Brick & Sewer-Pipe Co. of Chilhowie.

THE successful organization of the Fort Payne Bank, with a capital stock of \$50,000 fully paid in, is looked upon as the forerunner of a number of movements for that Alabama town which will bring renewed prosperity.

THE Treasury Department has received a special report from Special Agent Ira Ayer, in which he states that the production of tin and terne plates for the quarter ended June 30, 1892, as shown by the sworn statements of manufacturers, is over 8,000,000 pounds, as against 3,004,087 pounds during the previous quarter, and about 5,240,000 pounds for the previous nine months, the total production for the whole year being 13,240,830 pounds. Of the 8,000,000 pounds produced during the last quarter over 5,000,000 pounds were made from American black plates. In addition to the foregoing, the production of American sheet iron or steel into articles and wares tinned or terne-coated during the fiscal year ended June 30, 1892, according to this report, was more than 2,000,000 pounds, the returns being as yet incomplete.

IT is of interest to know that in the case of the Bank of Birmingham (Ala.) against the mercantile agency of R. G. Dun & Co. a new trial has been refused by Judge Shippen, of the United States Circuit Court, New York. The suit was to recover losses sustained by the bank through a report received from the agency as to the standing of an Oswego firm. The bank gave them credit on Dun's report, and the court holds that the agency is responsible for the results of the report of its agent.

Tobacco Experimental Farms in Georgia.

[Special Correspondence.]

MACON, GA., July 18.

A few days ago Col. Jeff Lane, manager of the Georgia Southern & Florida Railroad, a new road extending from Macon, Ga., to Palatka, Fla., issued an invitation to more than 200 farmers living along the line of his road to join him in a visit to inspect the tobacco fields at the road's experimental farm, located at Cyclonetta, about eighty miles from Macon, in Irwin county, Ga.

The train of four coaches left the depot at 8 o'clock. There were not many on the train at the start, but at each station the farmers, with their lunch baskets, were in waiting, and by the time we reached Cyclonetta there were more than 170 farmers on the train. The road runs through some of the best farming centres of Georgia—Houston, Dooley, Irwin, Berrien and Lowndes. The building of the road opened up some of the finest yellow pine timber in the South, and immediately immense saw mills were located on it, and now fifty or more mills are operating on or near the road.

The lands on the road are well adapted to all crops raised in our section—corn, cotton, sugar cane, potatoes and fruits of all kinds. They seem especially adapted to the grape and pea. Valdosta, in Lowndes county, on this road, is the second largest market for long staple or Sea Island cotton in the United States. This section is also the home of the Georgia watermelon.

Cyclonetta is where the Georgia Southern & Florida Railroad has established its experimental farm. It is located eighty miles from Macon in Irwin county. It consists of 1,000 acres of undulating pine lands, of which 500 acres are under culti-

vation. Three years ago the Georgia Southern & Florida Railroad took possession of the lands. There was not an acre cleared on the tract, as a cyclone or "hurricane" a few years ago blew down the dense forest on about 500 acres. To clear this of the pine logs and clay roots, as the roots of trees blown up are called, was a herculean task, but it was commenced. A large force of men was employed to pile and burn the logs, fences were made, the largest and best barn in the State was erected, the farm was stocked with fine horses, cows, sheep and hogs, an imported jack and stallion were bought, fine poultry yards built, a beautiful superintendent's home and nice cottages for laborers were erected. Professor Irby, of Mississippi, was put in charge of the farm. He commenced to plant fruit trees and all crops suitable to this climate, and to experiment with others and to test their adaptability to this section.

Last fall it was determined to test tobacco culture, and to inspect the tobacco then growing was the object of our visit to Cyclonetta. We arrived at Cyclonetta about 11.30 o'clock, and as soon as the train came to a halt the crowd left the cars and went for the tobacco field, only a few yards distant. It was indeed a novel sight to see a field of tobacco in Georgia. Many had never seen such except in Virginia. Many were the questions asked of the manager, and, as it seemed to open up a new industry in Georgia for our farmers, they were anxious to find out all they could in regard to tobacco culture.

Having spent some time in the tobacco field, the party started on a tour of inspection to see the live stock, poultry, hogs and truck garden. From the garden on a slight eminence the whole farm could be seen. What a beautiful sight! Where three years before only logs and clay roots could be seen were magnificent crops of corn, cotton, potatoes, tobacco and melons. At a little distance could be seen the young and beautiful orchards of several hundred acres of peaches, pears, plums, apples, etc. Near the vineyard and strawberries, among the young trees, the luscious Georgia watermelon was basking in the sunshine. After looking at the truck farm, the fine cabbage, tomatoes, squashes, beans, pepper, carrots, parsnips, potatoes, etc., the crowd wended its way to the station some 300 yards distant. Here some 200 of the Georgia watermelons raised on the farm were cut. It was the largest "watermelon consumption" I ever beheld. Soon all aboard was sounded and we started for Tifton, eight miles south, where the Messrs. Tift have a very large saw mill and, it is said, the finest tobacco patches in the South.

When the train stopped a grand sight greeted our eyes. A magnificent field of tobacco was in sight, and adjoining a beautiful vineyard, the grapes just beginning to ripen. There was about five acres of wrapper tobacco, which was splendid. It was still left in store for us to yet see the best tobacco we had ever seen. Near Mr. Tift's residence he has ten acres of tobacco which will average six feet high, leaves two to two and one-half feet long, fourteen to sixteen inches wide. It is estimated to yield 2,000 pounds to the acre. The crowd was perfectly captivated, and with good spirits they repaired to the train to bring forth their baskets and dispose of their lunch, after which they started for the return trip. To W. B. Sparks, president, and Jeff Lane, manager, of the Georgia Southern & Florida Railroad, the people of Georgia are and will be indebted for the finest experimental farm in the South and with its efforts to develop our resources. The experiments so far show that the lands on the Georgia Southern & Florida Railroad are peculiarly adapted for fruits, grapes and tobacco.

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CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Attalla—Coal Mine.—D. A. Hughes is opening a coal mine near Attalla.

Bridgeport—Car Works.—The Bridgeport Land & Improvement Co. has obtained control of the Bridgeport Steel Works, and they will doubtless soon put the plant in operation.

Decatur—Saw Mill, etc.—The Alabama Hoop & Lumber Co. contemplates enlarging and adding planing and siding mill to its plant.

Gurley—Spoke Works.—The Enterprise Spoke Co. has recently put new machinery in its works.

Hamburg—Cotton Gin.—C. C. Moore & Co. are erecting a cotton gin.

Huntsville—Flour Mill.—D. R. Raymond, of Huron, S. D., contemplates the erection of a flouring mill at Huntsville.

Little Oak.—Cotton Gin.—Carroll Sanders, of Troy, will erect a cotton gin at Little Oak.

Troy—Cotton Gin.—T. S. Carter will erect a cotton gin.

ARKANSAS.

Bear—Reduction Plant.—It is reported that the Lost Louisiana Co. has contracted for the erection of a reduction plant for reducing ore by chlorination, its capacity to be 100 stamps.

Black Rock—Shingle Mill.—Our recent report of F. A. Johnson's new mill should have been shingle and not saw mill.

Forrest City—Canning Factory.—The Forrest City Canning Co. has been incorporated to can and preserve vegetables, etc. The capital stock is \$10,000.

Marked Tree—Saw Mill.—The Chapman & Dewey Lumber Co. has erected a saw mill.

Pine Bluff—Steam Laundry.—Leon Levy has purchased the American Steam Laundry and will probably organize a stock company to operate it.

Van Buren—Cotton Compress.—The stock company recently reported as organized to erect a cotton compress is known as the Van Buren Compress & Manufacturing Co.; capital \$50,000. The plant is now in course of erection. Robert S. Hays, secretary.

FLORIDA.

Brooksville—Phosphate Mines and Works.—The Sterling Phosphate Co.'s property has been purchased by a Cleveland (Ohio) party.

Crystal River—Fibre Factory.—Messrs. Hay & Paul will start a palmetto fibre factory.

Jacksonville—Phosphate Mines and Plant.—The Stonewall Phosphate Co. is about to put in a new and extensive plant for mining, hauling, elevating, refining and reducing their product.*

Key West—Water Works.—The city is to hold an election to consider the issuance of \$100,000 of water works and fire protection bonds. Address the mayor.

Sanford—Variety Works.—Morrison & Middlekauff will shortly put in additional machinery and erect a finishing-room.*

Vallaha—Phosphate Mines.—The Lake County Phosphate & Fertilizer Co., recently reported as incorporated, will develop phosphate lands.*

GEORGIA.

Albany—Water Works.—A system of water works will be constructed; all material has been purchased and work commenced. W. H. Gilbert, mayor.

Americus—Broom Factory.—The broom factory reported several weeks ago is operated as the

Americus Broom Factory; E. D. Ansley, secretary and treasurer. He expects to enlarge factory in the near future.*

Cave Springs—Iron Furnace.—J. M. Cowper is endeavoring to organize a company to erect a ferro-manganese furnace.

Macon—Electric Power Plant.—The Macon & Indian Springs Railway Co. will erect an electric power plant.

Rome—Cotton Mill.—E. J. Moultrie, Robert D. Van Dyke and Elbert McGhee have organized a \$50,000 company to erect a cotton mill. They will put in about 5,000 spindles and manufacture yarns and rope.

Sibley—Planing Mill.—The Central Georgia Land & Lumber Co. will put additional machinery in its planing mill.

Westonia—Saw Mill.—Weston & Co. are erecting a saw mill. It is nearly completed and will soon be in operation.

KENTUCKY.

Bowling Green—Hosiery Mill.—A. G. Rowe, of Nelson county, will establish a hosiery mill in Bowling Green. Machinery has been contracted for.

Carrollton—Woolen Mills.—The Carrollton Woolen Mills will put in new machinery.

Carrollton—Creamery.—A creamery may be erected at Carrollton. Mr. Barker is interested.

Carrollton—Distillery.—Jett Bros. will erect a new distillery to have a capacity of mashing 200 bushels daily, and arrangements will be made so that the capacity may be doubled with the addition of a few machines.

Covington—Foundry and Machine Works.—The Covington Machine Works has increased its capital stock from \$35,000 to \$50,000, the money to be used as additional working capital.

Henderson—Washing Machine Factory.—Strother Banks, Edward Oberdorfer, O. W. Rash and J. B. Knott will organize a company to engage in the manufacture of a self-heating washing machine.

Louisville—Cotton Mill.—The Louisville Cotton Mill Co. contemplates extending its plant.

Louisville—Steam Laundry.—Thomas R. Pugh, John R. Sears and D. C. Vaughan have incorporated the Boston Steam Laundry with a capital stock of \$5,000.

Newport—Publishing Company.—Walter Phillips, A. L. Smith and Henry Smith have incorporated the Machinery Publishing Co. to publish a journal to be entitled *Machinery*. The capital stock is \$10,000.

Pineville—Saw Mill.—John Falkner, of Campbellsville, will start a saw mill at Four Mile.

Princeton—Foundry and Machine Shop.—An iron foundry and machine shop may be erected. The Mason & Ford Co., of Eddyville, is interested.

LOUISIANA.

New Orleans—Fire Alarm Company.—The National Automatic Fire Alarm Co. of Louisiana, capital stock \$30,000, has been chartered to operate automatic fire alarms, etc. The incorporators are E. J. Hart, Ernest B. Kruttschnitt, C. Edmund Kells and others.

New Orleans—Car Shops.—The New Orleans & Carrollton Railroad Co. will build car shops.

New Orleans—Central Factory.—The Ferris Sugar Manufacturing Co., Limited, recently reported as incorporated, is erecting at Barbree Station, in St. Landry parish, two three-roller mills, built by the Reading Iron Co. These mills are six feet six inches and six feet nine inches respectively, by thirty four inches in diameter, and will be erected behind a Niles mill of six feet by thirty inches, cane thus going through these mills receiving six crushings. All of the machinery for a complete plant to manufacture syrup will be in operation in ample time for this season's business. The capacity of the plant is estimated to be equal to grinding from 700 to 800 tons of cane a day. The Walburn-Swenson Manufacturing Co., of Fort Scott, Kans., have taken the contract to erect a 150,000-gallon Swenson effect for this new central factory.

New Orleans—Grain Elevator.—Messrs. Goddard & Hall and Pearl Wight, of Woodward, Wight & Co., will erect a grain elevator of 250,000 bushels capacity daily. Specifications for the elevator have been made and accepted and contract for its erection let.

New Orleans—Molasses Company.—The Louisiana Molasses Co., Limited, has been incorporated to deal in, receive and reboil molasses. Berdolph Meyer is president; Simon Pfeifer, vice-president and treasurer, and Paul Gonzales, secretary; capital stock \$30,000.

New Orleans.—The Orleans Jewelry & Loan Co., Limited, has been incorporated with a capital stock of \$25,000.

MARYLAND.

Annapolis—Greenhouses.—A. E. Seidenitz has erected eight new greenhouses.

Baltimore—Electric-light Plant.—An incandescent electric-light plant is to be put in the Academy of Music. Contract has been let the Fort Wayne (Ind.) Electric Light Co.

Baltimore—Electric light and Power Plant.—The Thomson-Houston Electric Co. will erect an electric light and power plant at Baltimore for use in the Belt Line tunnel.

Baltimore—Electric Power-house.—The City Passenger Railway Co. has let contract to the W. A. Poole & Sons Co. for the machinery to be installed in its Blue Line power-house. The Walker Co., of Cleveland, Ohio, has contract for the drums.

Baltimore—Manufacturing.—The J. C. Lake & Son Co., reported last week as incorporated, has purchased an old plant for the manufacture of vessel fixtures, oyster dredges, lifters, winders, etc. About next January the company will put in special machinery. J. C. Lake is president and general manager; Simon Lake, treasurer, and Wm. K. Whiting, secretary.

Baltimore—Greenhouse.—Fred G. Burger is building a new greenhouse.

Bay View—Electric-light and Power Plant.—Wm. F. McCauley, Edw. H. Griffith, Jos. Schreiber, Gerhard Burke and Chas. G. Hill have incorporated the Bay View Electric Light & Power Co. with a capital stock of \$50,000.

Cumberland—Water Works.—The city will doubtless put in new pumping machinery (high duty), boilers and new mains at a cost of about \$100,000. Wm. E. Griffith is secretary of the board of water commissioners, and can be addressed for information.

Drum Point—Brick Works.—The Calve t Brick Co., recently reported (under Baltimore as incorporated), has built brick works at Drum Point with a capacity of 30,000 daily. In the fall capacity will be increased to 100,000. Frank Debillus is manager.

Elkton—Bridge.—The Youngstown (Ohio) Bridge Co. has received contract from the Cecil county commissioners at \$14,967 to rebuild Bohemia bridge over the Bohemia river. The bridge will be 1,352 feet long between abutments, with a 90 foot draw.

Frederick—Tannery.—Geo. K. Birely & Sons are improving their tannery.

Mt. Washington—Electric light and Power Plant.—Charles G. Hill, Jno. T. Graham, Gerhard Burke, Joseph Schreiber and Edw. A. Griffith have incorporated the Mt. Washington Electric Light & Power Co. with a capital stock of \$50,000.

MISSISSIPPI.

Flora—Water Works.—The construction of a water works system is talked of.

Water Valley—Manufacturing, etc.—The Water Valley Industrial Association has been incorporated for manufacturing marl, iron, steel, clay, etc. The capital stock is \$10,000.

NORTH CAROLINA.

Bethel—Lumber Mill.—The Bethel Manufacturing Co. has been organized with a capital stock of \$8,500 to operate a lumber mill. S. A. Gainer is president; J. J. Barnhill, vice-president; W. J. Rollins, secretary, and A. B. Cherry, treasurer. Negotiations for machinery are in progress.

Charlotte—Cotton Mill.—D. A. Tompkins, R. M. Miller, Jr., and E. A. Smith have incorporated the Atherton Mills with a capital stock of \$100,000 for the purpose of erecting a 10,000-spindle cotton mill.

Concord—Flour Mill.—Endeavors are being made to organize a \$15,000 stock company to erect a roller flour mill. Giles T. Crowell can give information.

Hamlet—Cotton Compress.—The Seaboard Air Line (office, Wilmington) is erecting a cotton compress at Hamlet.

Leechville—Lumber Mill.—The D. C. Way Lumber Co. has erected two new dry-kilns and put in new machinery.

Lexington—Tobacco Factory.—Baxter Shemwell is improving his tobacco factory.

Murphy—Saw Mills.—Saw mills will be built near Murphy by Messrs. J. F. Besby, C. H. Chatburn, J. F. Ball and Culbertson, of Minneapolis and Augusta, Minn.

Ramseur—Furniture and Broom Factory.—The Alberta Chair Works has recently put in machinery for manufacturing furniture and brooms.

Sanford—Saw Mill.—Omohundro & Diggs will rebuild their saw mill which was lately destroyed by fire.*

Winston—Tobacco Factory.—Thomas Farrow and Ernest Dalton will erect a factory for the manufacture of tobacco.

Winston—Tobacco Factory.—Work has been commenced on the leaf tobacco factory of Pollard & Ware. It will be five stories high, of brick, and cost \$14,000.

SOUTH CAROLINA.

Aiken—Water Works.—The city council has accepted the contract of E. F. Fuller, of New York, for the construction of water works in Aiken. The pumping plant will include two engines with a capacity of 1,500,000 gallons daily.

Charleston—Publishing, etc., Company.—The Southern Stamps & Publishing Co. has increased its capital stock from \$2,800 to \$5,000.

Chester—Cotton Mill.—A charter has been granted to the Catawba Mills Co. J. W. Dunnovan is president; S. M. Jones, vice-president, and S. B. Latham, secretary and treasurer. This concern is not a new one, but is simply a new charter under a different name for the company recently reported in full.

Fort Mill—Cotton Mill.—The Luna Cotton Mill Co. has been chartered to spin and weave cotton. The capital stock is \$35,000; incorporators, Samuel E. White, J. W. Ardrey, C. P. Culp and others. This company will operate the Luna factory which was recently fully reported.

Newberry—Fence Company.—Jas. A. Barton, James W. Tribble and T. M. Neil have incorporated the Newberry County Hedge Fence Co.

Sumter—Machine Works.—The Cottonseed Crusher Co., of South Carolina, has been chartered to manufacture and sell the H. S. Taylor patent crusher; capital stock \$5,000. The incorporators are H. Ryttenberg, A. C. Durant, Jno. S. Richardson and three others.

TENNESSEE.

Chattanooga—Rolling Mill.—It is reported that James McCoy, of Harriman, is endeavoring to organize a stock company to build a rolling mill at Chattanooga.

Chattanooga—Machine Shops.—It is reported that the Queen & Crescent Route will erect extensive machine shops at Chattanooga to employ 1,000 men.

Chattanooga—Drain Tile Works.—D. P. Montague & Co. have added the manufacture of drain-pipe to their other products. Considerable new machinery was placed for the purpose.

Dayton—Brick Works.—F. L. Lambert may start brick works.*

Deer Lodge—Oil Wells.—A stock company has been formed to bore for oil. J. T. Hodge can give information.

Elizabethton—Shoe, Woodworking and other Factories.—Ground was broken here to-day for the location of a large shoe factory. One hundred operatives are already here. The capital stock of the concern is \$100,000, and 150 skilled laborers will be employed at the start. The contract calls for the completion of the building by September 15th. A steam brick making plant of large capacity and a metal and woodworking industry with a capital stock of \$20,000 have also closed contracts. These results are the outcome of negotiations carried through successfully by the Co-operative Town Co. The shoe plant is moved from Asheville, N. C., and the other concerns are new organizations. It is understood that a number of other enterprises are dealing with the company with a view to location.

Harriman—Bolt and Horseshoe Works.—Messrs. Roberts, Pencoast, Burt and MacDonald are considering the organization of a stock company to erect bolt and horseshoe works.

Harriman—Wall paper Printing Works.—Carl Stolberg, of Sweden, and P. T. Waters and D. F. Layton, of Harriman, will erect wall paper printing works at once. The machinery has already been purchased.

Harriman—Planing Mill.—S. H. Keller, of Tallapoosa, Ga., will remove his planing mill plant to Harriman. About fifty men will be employed in the plant.

Harriman—Flour and Feed Mill.—Evelyn Denny and A. T. Daniels will put new machinery in the Hassler mill, and operate it on a large scale as a flour and feed mill.

Knoxville—Sewerage System.—The contract for the construction of the city's sewerage system has been let to M. J. Condon & Co. on their bid of \$189,631.77.

Knoxville—Water Works.—A local paper states that a wealthy foreign syndicate has under consideration plans for the construction of new water works system at Knoxville at a cost of about \$600,000.

Spring City—Iron Bridge.—J. L. McPherson, of Spring City, Tenn., wants bids on an iron bridge 250 feet long.

Tipton—Saw Mill.—Whiteman Bros. have put in a band saw mill.

Trenton—Foundry and Machine Shops.—Ramsay, Owens & Co. have purchased, will enlarge

and operate the Trenton Foundry and Machine Works.

Union City-Spoke Factory.—The Tennessee Spoke Co. has purchased and will enlarge Ames & Co.'s spoke factory. W. H. Gardner is general manager.

TEXAS.

Austin-Publishing Company.—E. W. Hunter, Henry Hutchings and Oliver Brush have chartered the News Publishing Co. with a capital stock of \$10,000.

Burnet-Flour Mill.—Mr. Harrison has made arrangements to put in a roller flour mill.

Chillicothe-Flour Mill.—The Chillicothe Mill & Elevator Co. is erecting the flour mill previously reported.

Flatonville-Publishing Company.—The Flatonville Publishing Co. has organized with G. G. Moore as president; J. M. Harrison, vice-president, and W. Williford, secretary and treasurer.

Fort Worth-Furniture Company.—J. T. Woolery, D. Sellers and W. G. Turner have incorporated the Fort Worth Furniture Co. with a capital stock of \$50,000. The company will at once begin manufacturing upholstered goods etc., and eventually make furniture.

Fort Worth-Planing Mill.—A Dallas firm contemplates erecting a planing mill at Arlington Heights. A. L. Lowe, of Fort Worth, can probably give information.

Galveston-Compress Company.—The Rembert Roller Compress Co. has amended its charter increasing its capital stock to \$100,000.

Granbury-Mercantile Company.—E. M. Twist and others have incorporated the Twist Mercantile Co. with a capital of \$5,000.

Hearne-Cotton Compress.—The Hearne Compress & Manufacturing Co. will erect a cotton compress, and work on it has already commenced.

Mineola-Cotton Compress.—The Mineola Compress Co., recently reported as organized to erect a cotton compress, has obtained its charter; capital stock \$50,000; incorporators, R. G. Reading and others.

Palestine-Cotton Gin.—Cooke & Co. are erecting a gin.

Port Lavaca.—W. J. Chapman and others have organized the Matagorda Bay Oyster Co. to transact a fish and oyster business. The capital stock is \$5,000.

Sulphur Springs-Foundry and Machine Shop.—R. S. Vaniver will erect an iron foundry and machine shop.

Terrell-Cotton Gin.—Mr. McLeod has erected a new cotton gin.

Valley View-Elevator.—The Cameron Elevator Co., of Fort Worth, is building an elevator at Valley View.

VIRGINIA.

Alexandria.—The Press Claims Co. has been chartered with a capital stock of \$500,000. Its object is to prosecute claims against the government and secure patents.

Alexandria-Supply Company.—J. H. Warden, R. L. Carnerin and John Miller, of Washington, D. C., are the promoters of the Columbia Supply Co. lately reported. The company's purpose is to deal in oil, coal and building materials; capital stock \$100,000.

Bedford City-Bridge.—The supervisors of Bedford county are corresponding with the supervisors of Putnam county in reference to building a joint bridge over the Staunton river, which runs between the two counties.

Charlottesville-Electric Light Plant.—The Charlottesville Electric Light Co. will increase the capacity of its plant.

Charlottesville-Woolen Mill.—The Charlottesville Woolen Mills will put in additional machinery.

Clifton Forge-Sewerage System.—For information concerning proposed sewerage, address Councilman Parker.

Norfolk-Machine Shop.—Jas. M. Link has started a machine shop, and will especially plan and equip saw mills and manufacture saw mill specialties.

Petersburg-Canning Factory.—George Potts has started a canning factory under the name of the Appomattox Cannery.

Richmond-Grain Elevator.—The Chesapeake & Ohio Railroad Co. will rebuild its grain elevator, reported in this issue as burned.

Roanoke-Iron Works.—The Cushman Iron Co. intends to enlarge its plant, and next year will probably manufacture bicycles.

Roanoke-Mining Company.—T. W. R. and John Engleby are the promoters of the Engleby Mineral Mining Co., lately reported as incorporated. The company's purpose is to deal in real estate, mine, etc.; capital stock \$50,000.

Staunton-Flour Mill.—Messrs Isaac Witz, C. A. Holt, Andrew Bowling and M. Kivlighan have formed a partnership under the name of White Star Mills, have purchased and will operate the Bowling and Witz & Holt mills.

Virginia-Lime Works.—George V. Case has lately been in Huntington, W. Va., endeavoring

to organize a stock company to develop his lands in Virginia and erect lime works.

Virginia-Coal and Coke Company.—The Pine Run Coal & Coke Co., of Big Tom Creek, has been incorporated to transact a coal and coke business. The capital stock is \$20,000.

WEST VIRGINIA.

Charleston-Pickling Establishment.—E. Polusz & Son, late of Wilkesbarre, Pa., have erected a meat smoking and pickling establishment of about 90,000 pounds capacity weekly.

Huntington-Light Company.—J. L. Caldwell, Rufus Switzer, G. L. Halner, Geo. N. Biggs and others have incorporated the Consolidated Light & Railway Co. with a capital stock of \$100,000.

Huntington-Electric Power Plant.—The Huntington Electric Light & Street Railway Co., the gas company and the Belt Line Street Railroad have consolidated as the Consolidated Light & Railway Co., and will erect a new electric power plant.

Meadow Creek Station-Coal and Coke Company.—Edward Crickman, of Caperton; Nehemiah Daniel and C. E. Bemon, of Beury; David Morgan, of Sewell Depot, and Joseph Bleau, of Meadow Creek, have incorporated the Meadow Creek Coal & Coke Co. with a capital stock of \$200,000; principal office to be at Bemon (no post-office), Fayette county.

Moundsville-Cotton Mill.—The cotton weaving mill recently reported is now being erected by Albert Snape & Bro.

Philippi-Coal and Lumber Company.—D. W. Gall, Jr., and L. O. Neale, of Philippi; W. H. Baker, J. E. Sands and others, of Fairmont, have incorporated the Valley Coal & Lumber Co. with an authorized capital stock of \$1,000,000.

Pickens-Saw Mill.—G. M. Whitescarver is putting in a saw mill.

Sutton-Bridge.—The county court has decided to build a suspension bridge across Elk river. G. W. Curtin and J. S. Hyer are commissioners to contract for the building of the bridge.

Wheeling-Factory.—J. W. Hunter is building a new factory.

Wheeling-Cotton Mill.—B. F. Gambrell, of Baltimore, Md., may organize a stock company to erect a 10,000 spindle cotton mill at Wheeling.

Wheeling-Galvanizing Plant.—The Riverside Steel Pipe Works will add a galvanizing plant.

Wheeling-Tool Works.—The Warwood Tool Co. has been organized with a capital stock of \$100,000, and will erect a plant for manufacturing its specialties.

BURNED.

Baltimore, Md.—J. T. Whitehurst's lamp black factory.

Greenville, N. C.—Farmer & Eccleston's saw and planing mill; loss \$30,000.

Louisville, Ky.—The Dowe Wire Works; loss about \$50,000.

Magnolia, Ark.—Putnam's saw mill, near Magnolia.

Paris, Tenn.—The Eagle Flouring Mills.

Richmond, Va.—The Chesapeake & Ohio Railroad Co.'s grain elevator; loss about \$100,000.

BUILDING NOTES.

Alexandria, La.—Hotel.—The hotel lately noted as to be built will be a three-story brick structure 106½x213 feet, and have electric lights, heating apparatus, elevator, etc. The cost will be about \$30,000. Correspondence is desired with architects and contractors. Address D. H. Mays.

Atlanta, Ga.—University.—Work is to commence shortly on the erection of a \$35,000 building at Clark University to replace the main building destroyed by fire a few months ago. Dr. W. H. Hickman can be addressed.

Augusta, Ga.—Church.—The members of Thankful Colored Baptist Church will build a church.

Baltimore, Md.—Warehouses.—M. F. McCormick will build a five-story brick warehouse, and George W. M. Crook, a four-story brick warehouse.

Baltimore, Md.—Depot.—Baldwin & Pennington have completed plans for a six-story passenger depot to be built by the Baltimore & Ohio Railroad near the mouth of its Belt Line tunnel. Two stories of the building will be underground and its dimensions are to be 100x20x200 feet. Elevators, electric lights, etc., will be put in; a 140-foot tower twenty-eight feet square is also provided for.

Baltimore, Md.—University.—Philip Walsh & Sons have been awarded contract to erect the McCoy Hall at the Johns Hopkins University. Baldwin & Pennington are the architects.

Baxley, Ga.—Church.—J. A. Sedwick has contract for building an edifice for the Methodist Episcopal Church.

Beverly, W. Va.—Courthouse.—F. J. Triplett, county clerk, will receive proposals until August

8 for the erection of a new courthouse in Beverly for Randolph county.

Brunswick, Ga.—Warehouses.—W. F. Penniman, C. B. Lloyd and F. E. Cunningham will erect six warehouses.

Carrollton, Ga.—Courthouse.—Carroll county will build a new courthouse.

Charlotte, N. C.—Hotel.—Henry Gillard and R. S. Hunter have awarded contract to J. C. Herring for the erection of a hotel in the north-eastern part of Charlotte.

Cleveland, Tenn.—Courthouse.—S. W. Marshall has secured contract at \$26,500 for building the courthouse previously reported. E. Lamm, of Chattanooga, prepared the plans.

Columbia, S. C.—Church.—The Green Street Methodist Church will build a new edifice.

Columbia, S. C.—Hospital.—A building will probably be erected for the Columbia Hospital Association.

D. Land, Fla.—Dr. Fisher may build a brick block.

El Paso, Texas.—Hospital.—Architect Krause has prepared plans for a building for the Hotel Dine Hospital.

Fort Worth, Texas.—College.—A \$27,000 building will, it is stated, be erected at the Polytechnic College.

Fort Worth, Texas.—College.—John C. Ryan is said to be arranging for the erection of a college at Lexington Heights.

Grayson, Ky.—College.—The erection of a \$25,000 college building is proposed. G. P. Simmons, Box 39, can be addressed.

Greensboro, N. C.—Hotel.—Epps & Hackett are preparing plans for a five-story hotel 110x135 feet for B. J. Fisher. Elevators, hot and cold water, electric lights, etc., will be put in.

Henderson, Ky.—Church.—The Baptists will build a brick and stone edifice.

Houston, Texas.—Hall.—The Knights of Pythias are considering the erection of a \$50,000 or a \$75,000 hall building.

Houston, Texas.—Hospital.—A three-story brick building 65x97 feet, with a 122 foot wing, will be erected for St. Joseph's Hospital.

Keyser, W. Va.—Church.—A \$6,000 brick edifice 40x65 feet will be built for the Presbyterian Church.

Knoxville, Tenn.—Sanitarium.—Plans have been prepared for a 100-room addition to the East Tennessee Sanitarium.

Lexington, Va.—Church.—The colored Methodists will build a brick and stone edifice 45x60 feet, with an 85 foot tower. J. M. Bean can give particulars.

Louisville, Ky.—School Buildings.—The school board will receive bids until July 30 for erecting the first and fourth ward school buildings recently mentioned. Charles D. Meyer and Drach & Thomas are the architects.

Macon, Ga.—Depot.—It is stated that a freight depot will be built for the Central Railroad.

Maryville, Tenn.—College.—Joseph Bauman, of Knoxville, is preparing plans for a large addition to Maryville College.

Morgantown, N. C.—Church.—The members of Grace Episcopal Church will build a new edifice.

Moundsville, W. Va.—Hotel.—The hotel noted in last issue as to be built by John Henrietta will be a two-story brick structure 49x148 feet, with hot air heating, hot and cold water, etc. M. F. Geisey, of Wheeling, prepared the plans.

New Orleans, La.—Mrs. A. E. Jamison has permit to build a \$12,000 cotton shed.

New Orleans, La.—Warehouse.—The Louisville & Nashville Railroad Co. (office, Louisville, Ky.) will erect a large warehouse in New Orleans.

Oxford, N. C.—Church.—Hundley Bros. & Co. have been awarded contract for building a brick and granite church for the Baptists. It will cost about \$12,000.

Roanoke, Va.—Church.—Wilson & Huggins are preparing plans for an edifice for the Second Presbyterian Church.

Roanoke, Va.—Wilson & Huggins are preparing plans for a three-story office building for A. Lewis and W. W. Berkeley, to have hydraulic elevator and steam heat; also plans for a three-story brick and stone business building for C. W. Lind.

Tallahassee, Fla.—Church.—The Methodist Episcopal church lately mentioned are building a \$15,000 church. Benjamin Price, of Philadelphia, Pa., is architect, and Gilmore & Davis, contractors.

Washington, D. C.—The Post expects to erect the building lately mentioned for its business during this and the coming year.

Washington, D. C.—Hall and Warehouse.—Harbin & Arnold will erect a brick business house and hall building; Woodward & Lothrop will erect three-story warehouse 69x80 feet to cost \$5,500. Charles Edmonston is architect.

Winston, N. C.—Church.—The Methodists will build a church at East Winston.

RAILROAD CONSTRUCTION.

Alexandria, Va.—Electrical Railway.—The Washington, Alexandria & Mount Vernon Electric Railway Co., which has awarded contracts for its road, will use the Thomson-Houston system.

Aransas Harbor, Texas.—Railroad.—The Aransas Harbor Terminal Railway Co. has been chartered by J. P. Nelson, D. M. Picton, J. W. Maddox and others to build a railroad from Aransas Harbor to deep water at Aransas Pass, nine and three quarters miles distant. About \$60,000 has already been expended on road bed, trestles, etc., and 1,800 feet of track laid. The capital stock is \$250,000.

Atlanta, Ga.—Belt Railroad.—The building of another belt railroad is talked of.

Atlanta, Ga.—Belt Railroad.—The Georgia, Carolina & Northern Railroad Co. (office, Athens) has awarded contracts for its belt line, noticed in last issue, to the Southern Supply Co. and R. C. Strother, of Birmingham, Ala. The road is to be graded ready for cross ties ninety days after July 15. The work includes two iron bridges.

Baltimore, Md.—Electrical Railway.—The Baltimore Traction Co. has decided to equip its Carey street line with electricity.

Bowie, Texas.—Railroad.—The Chicago, Rock Island & Texas Railroad Co. has been organized by J. H. Matthews, Z. T. Lowrie and others. The road is to extend to a connection with the Chicago, Rock Island & Pacific Railroad now being built to Texas. It is stated that construction will begin at once.

Charleston, W. Va.—Electrical Railway.—H. D. Ruffner, John L. Thornhill and others have applied to the city council for franchise to build an electrical railroad.

Charlotte, N. C.—Railroad.—A. Tripp, of Blacksburg, S. C., superintendent of the Charleston, Cincinnati & Chicago Railroad, and R. G. Ward and C. S. Phillips, of that road's surveying corps, will, it is stated, survey a route for the proposed branch from Charlotte to Lancaster, S. C., a distance of forty miles.

Covington, Ky.—Electrical Railway.—The South Covington & Cincinnati Street Railway Co. contemplates extending its electrical road to Milldale.

Frankfort, Ky.—Railroad.—George B. Harper, general superintendent of the Kentucky Midland Railroad Co., reports that surveys are being made for extending its road from Frankfort to a connection with the Louisville Southern, ten miles, and eastward from Paris to Mt. Sterling, twenty-three miles.

Greenville, S. C.—Electrical Railway.—The city council has granted a franchise to the Thomson-Houston Co. for the construction of an electrical railroad. Work is to commence within six months.

Harper's Ferry, W. Va.—Bridge and Tunnel.—The Baltimore & Ohio Railroad Co. has awarded contract to Jones & Thorne, of Baltimore, for improvements at Harper's Ferry to cost about \$300,000. The work includes a tunnel 875 feet long and a steel bridge across the Potomac river 700 feet long.

Houston, Texas.—Railroad.—A corps of engineers under F. W. Pratt have commenced surveying the extension of the Missouri, Kansas & Texas Railroad from Boggy Tank to Houston.

Huntington, W. Va.—Electrical Railway.—The Huntington Electric Light & Street Railway Co., Huntington Gas Co. and the Belt Line Street Railway Co. have consolidated under the name of the Consolidated Light & Railway Co. with J. L. Caldwell, president. It owns about seven and a half miles of street railway, three of which are electric and four horse-power. Extensions and improvements will be made, including the equipment of the entire road with electric power. The capital stock is \$100,000.

Huntsville, Ala.—Railroad.—Nichols & Co. have contract for work on the extension of the Nashville, Chattanooga & St. Louis Railroad from Huntsville to Hobbs Island and have begun operations.

Knoxville, Tenn.—Street Railway.—The West End Street Railway Co., which is extending its lines, is laying heavier rails with the purpose of later on using steam or electricity as a motive power.

Macon, Ga.—Electrical Railway.—The Macon & Indian Springs Railway Co. has awarded contract for the electrical equipment of its road, also commenced construction, and will lay about six miles of track.

Monroe, N. C.—Railroad.—The Seaboard Air Line is investigating with a view to building a railroad from Monroe, N. C., to Winston. John C. Winder, of Raleigh, can give information.

Nashville, Tenn.—Railroad.—James P. McDonald, J. C. Anderson, Jackson Smith, William Kenefick and W. P. Denas, all of Knoxville, who have reorganized the Nashville, Tellico & Charleston Railroad Co. have obtained a charter which authorizes the construction of a railroad from Nashville to Athens, and thence on through

Monroe county to the North Carolina State line. The road at present runs from Athens to Tellico Plains, twenty-seven miles.

New Orleans, La.—Electrical Railroad.—Judah Hart, who has franchise over certain streets for the construction of a street railway, will shortly let contracts for an electrical railroad.

New Smyrna, Fla.—Railroad.—Louis McLain has contract for building the Jacksonville, St. Augustine & Halifax River Railroad (office, Jacksonville) from New Smyrna to Coquina. About twelve miles of this road is graded between Titusville and Rockledge for its further extension.

Norfolk, Miss.—Railroad.—The Natchez, Columbia & Mobile Railroad Co., lately reported as chartered, intends building a railroad from Norfolk southeast to Columbia, on Pearl river, a distance of forty miles. J. S. Butterfield, F. W. Norwood and W. W. Butterfield, of Chicago, Ill.; C. S. Butterfield, F. C. Avond and others are the incorporators.

Pine Bluff, Ark.—Railroad.—The Pine Bluff & Swan Lake Railroad has been located between Pine Bluff and Swan Lake, a distance of sixteen miles, and work will, it is stated, begin at once.

Quitman, Ga.—Railroad.—It is expected to begin work on the railroad from Quitman to Moultrie, lately noted, within sixty days. The Quitman Lumber Co. can give particulars.

Savannah, Ga.—Electrical Railroad.—The work of equipping with electricity the Coast Line Railroad, lately bought by J. H. Parsons, will commence at once. The line is about six miles long.

Savannah, Ga.—Railroad.—As a result of the deal between the South Bound Railroad and the Florida Central & Peninsular Railroad Co. (office, Jacksonville, Fla.), a railroad will be built from Savannah to Callahan, Harts Road or Jacksonville, Fla., connecting the two roads.

Tennallytown, D. C.—Electrical Railroad.—The Tennallytown & Rockville Electric Railway Co. will double-track its road from Tennallytown to Bethesda Park.

Washington, D. C.—Electrical Railroad.—A bill has been introduced in Congress renewing the franchise of the Brightwood Railway Co. and granting additional privileges. It provides for the construction of a trolley electric road from Washington to Brightwood and Takoma Park.

MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Baking Machinery.—The Wheeling branch of the United States Baking Co., Wheeling, W. Va., will need all kinds of machinery for baking bread and crackers.

Boiler.—Morrison & Middlekauff, Sanford, Fla., will want a forty horse-power boiler.

Boiler.—The Lake County Phosphate & Fertilizer Co. will buy a thirty horse-power boiler. Address Warren C. Spencer, manager, Yallaha, Fla., or 38 Milford street, Boston, Mass.

Boiler.—Ira W. Sylvester, Alexandria, La., wants a thirty horse-power boiler.

Boiler.—The Greene-Kidwell Soap Co., Savannah, Ga., will need a return flue fire-box boiler, twenty-five horse-power.

Boiler.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants a seventy-five horse-power boiler.

Boilers.—R. C. Edwards, Henderson, Tenn., wants to buy two boilers, one of forty horse-power and one of 100 horse-power. State price f. o. b. factory and at Henderson.

Boilers.—The following, of Baltimore, Md., have applied for permits to put in steam boilers: Hemmeter & Sullivan, 215 S. Bethel street, one of twenty-five horse-power; Aaron & Roffel, 510 W. Pratt street, one of ten horse-power, and De Lashmott & Co., one of ten horse-power, on lot between Chesapeake, O'Donnell and Patapsco streets.

Boiler and Engine.—T. F. Rankin, Reidsville, N. C., may want a twenty horse-power engine and boiler soon.

Brick Machinery.—P. L. Lambert, Dayton, Tenn., wants prices on brick-making machinery.

Broom Factory.—E. D. Ansley, Americus, Ga., will want machinery for broom factory.

Canning Factory.—R. M. Martin, Riceboro, Ga., wants to correspond with dealers in canning factory outfits.

Canning Factory.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C.,

wants full information concerning canning factory, cost of outfit, etc.

Concentrating.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants a concentrating table.

Concentrating Machinery, etc.—The Knap of Reeds Iron Mines will probably be equipped with a concentrating and washing plant, etc., next January. George D. Pittard, manager, Stem, N. C., can be addressed.

Corn Mill, etc.—The Neuse Lumber Co., Goldsboro, N. C., will need corn mill, bolter and sheller, etc.

Cotton Gin.—W. H. Brimberry, Jr., Camilla, Ga., wants to purchase a long cotton gin.

Cotton Mill.—Cotton mill machinery will be wanted. Address Geo. Taylor, Manchester Mills, Texas.

Cotton Mill.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants full particulars regarding operation of a \$100,000 cotton mill.

Cotton Mill Machinery.—The Lynchburg Cotton Mill & Improvement Co., Lynchburg, Va., will purchase 5,000 spindles and other cotton mill machinery.

Crusher.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants a No. 2 Dodge crusher.

Dynamo.—Ira W. Sylvester, Alexandria, La., wants a dynamo, incandescent system, for 200 sixteen candle-power lamps; also lamps, wire and fittings.

Electric-light Plant.—The Kissimmee Manufacturing, Improvement & Electric Light Co., Kissimmee, Fla., needs equipment for an electric-light plant (except engine and boiler). Address A. E. Drought.

Engine.—The Lake County Phosphate & Fertilizer Co. will buy a twenty-five horse-power engine. Address Warren C. Spencer, manager, Yallaha, Fla., or 38 Milford street, Boston, Mass.

Engine.—Ira W. Sylvester, Alexandria, La., wants a twenty horse-power engine suitable for driving dynamo.

Engine.—J. B. Garst & Bro., Roanoke, Va., may possibly buy an engine soon.

Engine.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants a fifty horse-power engine.

Engines.—R. C. Edwards, Henderson, Tenn., wants to buy an eighty horse-power side-crank engine, complete in every detail. State price f. o. b. factory and at Henderson.

Feeders.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants two Challenge feeders.

Flour Mill.—Atkinson & Woods, Elm Grove, W. Va., may need some flour mill machinery later on.

Grinding Machine.—The Lake County Phosphate & Fertilizer Co. will buy machinery for grinding phosphate. Address Warren C. Spencer, manager, Yallaha, Fla., or 38 Milford street, Boston, Mass.

Heating Apparatus.—P. L. Lambert, Dayton, Tenn., wants estimates on heating apparatus.

Heating and Ventilating Apparatus.—W. J. Edbrooke, Washington, D. C., will receive sealed proposals until August 9 for all the labor and materials required to complete a heating and ventilating apparatus for the United States post-office building at Canton, Ohio. (See ad.)

Iron Columns.—F. Hannabuss, Roanoke, Va., wants prices on iron columns.

Locomotive and Cars.—The Latrop-Hatten Lumber Co., Riverside, Ala., will put in a new logging engine and about eight cars.

Paper-bag Machinery.—C. H. Unverzagt, 404 Cathedral street, Baltimore, Md., wants to correspond with manufacturers of paper bag machinery.

Phosphate Plant.—The Stonewall Phosphate Co., Jacksonville, Fla., will want machinery for mining, hauling, elevating, refining and reducing their product.

Piping, etc.—The Keystone Coal & Coke Co., Belcher, W. Va., will want water pipes, valves, etc., for 100 coke ovens.

Planer and Matcher.—The Keystone Coal & Coke Co., Belcher, W. Va., will want a planer and matcher.

Pulleys, etc.—Pulleys and shafting will be wanted. Address Geo. Taylor, Manchester Mills, Texas.

Resaw.—The Keystone Coal & Coke Co., Belcher, W. Va., will want a resaw.

Roofing.—The Keystone Coal & Coke Co., Belcher, W. Va., will want corrugated iron roofing to cover roof 26x144 feet.

Roofing.—Omohundro & Diggs, Sanford, N. C., want prices on roofing.

Saw.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants a rip saw.

Saw Mill.—The Yorkville Construction Co., A.

E. Wemple, manager, wants a twelve horse-power traveling saw mill.

Saw Mills.—The Yorkville Construction Co., A. E. Wemple, manager, Yorkville, S. C., wants a ten stamp mill and a Huntington mill.

Tank.—The Keystone Coal & Coke Co., Belcher, W. Va., will want a water tank.

Tanks.—The Greene-Kidwell Soap Co., Savannah, Ga., needs some tanks.

Water Wheel.—A 600 horse power water wheel will be wanted. Address Geo. Taylor, Manchester Mills, Texas.

Woodworking Machinery.—Morrison & Middlekauff, Sanford, Fla., will need several wood-working machines.

Woolen Mill.—Woolen mill machinery will be wanted. Address Geo. Taylor, Manchester Mills, Texas.

G. W. Curtin, of Sutton, W. Va., desires to correspond with manufacturers of suspension bridge material and with contractors for building bridges.

Wm. A. Heffernan, of Lynchburg, Va., wants address of printers of colored catalogues.

W. P. Hogarth, of Brunson, S. C., wants pickle barrels and bottles.

W. W. Poole, of Cochran, Ga., desires to correspond with manufacturers of singletree irons.

W. W. Poole, of Cochran, Ga., wants crushed quartz sand.

SOUTHERN FINANCIAL NEWS.

New Banks.

Ceredo, W. Va.—The First National Bank of Ceredo, previously mentioned, has been authorized to commence business with Saml. S. Vinson, president, and Louis Prichard, cashier. The capital stock is \$50,000.

Chattanooga, Tenn.—The Union Bank & Trust Co., lately noted, has completed its organization with F. F. Smith, president, and C. E. Severance, cashier. The capital stock is \$50,000.

Pilot Point, Texas.—The Pilot Point National Bank has been authorized to commence business with A. H. Gee, president, and J. A. L. McFarland, cashier. It succeeds the Pilot Point Bank. The capital stock is \$60,000.

Abilene, Texas.—The First National Bank has declared a dividend of 5 per cent.

Arkansas City, Ark.—The Desha Bank has declared a semi-annual dividend of 10 per cent.

Augusta, Ga.—The Fairmont Co. has declared an annual dividend of 20 per cent., and the Augusta Land Co., a dividend of 10 per cent.

Baltimore, Md.—The Baltimore Stock Exchange will list \$2,000,000 Maryland Steel Co. 5 per cent. registered bonds, \$618,000 (additional) Consolidated Gas Co. consolidated 5 per cent. bonds, and \$1,200,000 Baltimore Traction Co. North Baltimore division first mortgage 5 per cent. 50-year bonds.

Baltimore, Md.—The Mercantile Trust Co. has declared a semi-annual dividend of 3 per cent.

Baltimore, Md.—The Mercantile Building Association has been chartered by Joseph E. S. Coney, W. S. Carr, E. E. Maull and others. The capital stock is \$50,000.

Bartow, Fla.—The Polk County National Bank has declared a dividend of 9 per cent.

Fort Payne, Ala.—The Fort Payne Bank has commenced business. This bank has purchased nearly all of the assets of the old Bank of Fort Payne. The capital stock is \$50,000.

Gainesville, Fla.—The city has disposed of \$50,000 of bonds through L. R. Cabell of New York city. The proceeds are for the construction of water works.

Galveston, Texas.—The Galveston Wharf Co. is placing on the market 100 3 per cent. 50-year \$1,000 bonds.

Greenville, Miss.—The First National Bank has declared a semi-annual dividend of 5 per cent.

Houston, Texas.—W. J. Hayes & Son, of Cleveland, Ohio, have purchased \$60,000 of 3 30-year 6 per cent. city school bonds for \$53,350.

Jacksonville, Fla.—The trustees of St. John's river improvement will shortly place \$175,000 of additional bonds on the market, and bids are invited for the whole lot, deliverable November 1, or for installments of \$50,000 each, deliverable November 1, February 1 and April 1. The bonds are to bear interest at 5 1/2 per cent.

Key West, Fla.—An election will probably be held to consider the issuance of \$100,000 of 10 year 6 per cent. bonds, to be known as water works and fire protection bonds, and to be of the denominations of \$100, \$500 and \$1,000 each. The mayor can give particulars.

Lexington, Ky.—The issuance of 105 \$1,000 4 1/2 per cent. funding bonds, maturing in 1932, is contemplated. The mayor can be addressed.

Lexington, Va.—Rockbridge county has succeeded in floating all of its issue of \$150,000 of 5 per cent. bonds at par. They replace 6 per cent. bonds.

Llano, Texas.—J. M. Speake will not organize

the \$100,000 investment company lately noted at present.

Louisville, Ky.—The Louisville Gas Co. has declared a semi-annual dividend of 3 1/2 per cent.

Memphis, Tenn.—The Memphis City Bank has declared a dividend of 3 per cent.

Meridian, Miss.—The Dime Savings Bank is being organized.

Montgomery, Ala.—The Montgomery & Cloverdale Electric Railway Co. will probably issue \$355,000 of bonds.

Newnan, Ga.—The First National Bank and the Newnan National Bank have each declared a semi-annual dividend of 3 per cent.

Palestine, Texas.—The International & Great Northern Railroad Co. at a recent stockholders' meeting authorized the execution of a third mortgage to the Mercantile Trust Co., trustee, dated March 1, 1892, and the issuance of bonds therefor to the amount of \$3,500,000.

Raleigh, N. C.—The Raleigh Cotton Mill has declared a semi-annual dividend of 4 per cent.

Savannah, Ga.—The Skidaway Shell Road Co. has declared a dividend of \$4 per share.

Shenandoah, Va.—The Shenandoah Furnace Co. will, it is stated, issue \$250,000 of bonds.

Wheeling, W. Va.—The Franklin Insurance Co. has declared a dividend of 3 per cent.

TRADE NOTES.

The contract for the two compound pumping engines, boilers, heaters, piping, etc., for the Madisonville (Ohio) water works has been awarded to the Laidlaw & Dunn Co., of Cincinnati and Chicago. This concern is full of orders. They have several water works jobs in hand, and are now adding some large tools.

MR. MUNNERYLYN has withdrawn from the Moore-Munnerylyn Co., of Atlanta, Ga., but the business will be continued under the same name, with Robert S. Pringle as manager. Mr. Pringle has had an extended business experience, and will undoubtedly keep things moving in an active manner. The company will continue to handle locomotives and cars, rails, fastenings, switches and other track material, coal, coke, pig iron and scrap.

The Ketchum dry kiln is growing in favor among lumbermen, and Mr. F. Kirk advises that they have recently contracted with the Durham Lumber Co., Durham, Ala., for a kiln of 50,000 feet daily capacity, and have just completed one of 40,000 feet capacity for the Eastabucha Lumber Co., of Eastabucha, Miss. Another is being put up for Lowry & Carter, of Ellisville, Miss., 20,000 feet daily capacity. Besides these they have contracts for twenty-six kilns in that section.

MR. ALBERT W. MANN, general manager of the National Cotton Gin & Wool Burre Co., of Boston, writes to us as follows: "We are having constantly a large number of inquiries concerning our gin from the South. The planters are going into long staple cotton, and require something better than the saw gin to save the fibre intact. The writer goes South, where he has already shipped some gins, to set them up and exhibit to the ginners and planters of those sections."

The Berlin Iron Bridge Co., of East Berlin, Conn., has received the contract for the new trolley works which Hughes & Patterson are to erect at Philadelphia, Pa. The buildings will be of iron from the designs of the Berlin company. The main building will be forty feet wide by 25 feet long, with a wing of the same width, 300 feet long, both two stories high. The rolling mill will be 120 feet wide by 160 feet long, with a annealing room seventy-five feet wide by 160 feet long. The whole plant will require about 800 tons of iron to be used in its construction.

The Hercules Iron Works, of Chicago, Ill., have added to their already extensive line of ice machinery and other specialties the manufacture of a new line of forging and bending machines for forging and for mangle iron and steel to any desired shape. One special feature of their machine is the rapid manufacture of tur. buckles of all sizes. They have also begun the manufacture and already placed on the market a new design of a light spring hammer which takes the place of more expensive tools where a hammer with a blow ranging from fifteen to thirty pounds is needed. The hammer is so arranged that one or more can be operated with a single belt. They are to be attached to posts or the side of the shop. Circulars of their tools will be sent on application.

The Williams Manufacturing Co., of Kalamazoo, Mich., who have been in the wind-mill business so many years, have recently perfected a steel rim, or felloe as some people term it, for their wind mill which it would seem is a great improvement, as the steel is perforated in such a manner as to leave a number of saw teeth projections. These are pushed into position by means of a square die, so as to admit of the saw, which is made out of white pine, being pushed into this slot in the steel, and then these saw-teeth projections are pressed right into the wood, the con-

struction being such that the sails are entirely surrounded by the steel, and they are held in position without the use of a bolt, pin or a rivet. These rims are made out of soft steel bands channeled so as to secure the necessary stiffness, and certainly strikes one as being an important feature in the improvement of wind mills.

ONE of the most prominent and progressive houses in Baltimore engaged in the manufacture of flour-mill machinery is that of Messrs. B. F. Starr & Co., whose offices and works are located at North and Centre streets, with a branch establishment in New York. This house was founded in 1857 and it is widely and favorably known. The factory is fully equipped with all modern machinery and tools and employs experienced and skilled workmen. This firm furnishes estimates and constructs all kinds of flour mill supplies, from the largest and most modern mill to the smallest merchant or custom mill, working both wheat or corn, either by rolls or stones. They have also had large experience in elevator and fertilizer work and machinery for spice mills and cracker bakeries—millstones, bolting chests, rock crushers—and handle a full line of leather, rubber and chain belting. They are the Southern agents for the Case Manufacturing Co., of Columbus, Ohio, whose product is so well known to the Southern trade.

In reply to the notice of injunction against the Kanneberg Roofing Co. by the Canton Steel Roofing Co., the Kanneberg Roofing Co. makes the following statement: "The Kanneberg Roofing Co. is still in business, and expects to so continue, notwithstanding the efforts of one of its competitors to create a different impression. This company had scarcely commenced business, some four years ago, when an infringement suit was commenced against it for the avowed purpose of crushing it out of existence. We did not crush, however, but immediately commenced the manufacture for the market of several other forms of roofing not involved in the suit and upon which our sales have steadily grown. We regret that our esteemed competitor, who has done so much heretofore to advertise our business, should seek now to create the impression that we were perpetually enjoined from making roofing, when he must know that we have been for some time past making and selling several other forms of roofing not involved in the suit referred to, and which have been pronounced by experts as free from infringement."

MESSRS. HINE & ROBERTSON, No. 54 Cortlandt street, New York city, special agents for the Wainwright Manufacturing Co., call the attention of steam users to the superiority of a straight tube heater over a coil heater, and especially one where it is provided with a settling chamber and a surface blow, thus combining all the advantages that are found in the water tube heaters of higher price, but sold at the price of a coil heater. It is universally admitted, so say Messrs. Hine & Robertson, that a straight tube heater provided with proper means of blowing it off, and built so that it gives a chance for the impurities of water to settle and be disposed of, is in every way far better than a heater in which the water has no chance to settle, but allows all the impurities to pass in or the boiler, there creating the chances of fouling and burning out the boiler. This can only be accomplished by the straight tube heater, and is impossible to do successfully with the coil heater. In constructing a straight tube heater that could be furnished at the same price as a coil heater a number of difficulties are met with when the ordinary tube is used, the principal one being that leaks will occur with the plain tube at the joints in the tube plates, due to the unequal expansion of the two metals. To provide means of compensating for this expansion makes the cost of other heaters such that the price must necessarily be high. This very serious trouble has been met and completely overcome by the use of the corrugated tube, which absorbs completely the expansion and thus removes the dangers of the leaks that otherwise take place in other heaters. This company has now in daily operation over 250,000 horse-power of its heaters, ranging in size from ten to 1,000 horse-power, and we have yet to learn of a single case of leak or ruptured tube. Only copper tubes are used in these heaters. This fact in itself is one that should claim the attention of all first-class engineers and steam users. The tubes are of guaranteed fineness; of Lake Superior copper, thus making their durability beyond any question.

TRADE LITERATURE.

MCLANAHAN & STONE, of Hollidaysburg, Pa., who have become so widely known through the excellence of the ore washers, screens, etc., which they manufacture, have issued a little pamphlet upon the subject of washers for pebble phosphate, giving also drawings of the single and double log-washers which they make for such work.

THE Lone Star Plaster Co., of Quanah, Texas, has sent out a neat little pamphlet devoted to the uses and advantages of "Climax cement plaster" which this company makes. This plaster is un-

usually firm and sets rapidly, besides giving a fine finish to the surface. It is equally adapted to outside or inside work, and 2,000 tons have been used on the woman's building at the World's Fair.

THE Egan Co., of Cincinnati, Ohio, the well-known originators and builders of all kinds of woodworking machinery, is about to issue a handsome catalogue of nearly 300 pages. It will be a fine specimen of typography, a souvenir of handsome engravings and a volume of information relating to this great company's extensive line of the most modern machinery for working wood in all forms.

THE fifth annual edition of "The Blue Book" Textile Directory has just been issued by the Davison Publishing Co., 176 Broadway, New York. This is very complete little textile directory, and gives the name, address and class of goods made by all textile manufacturers in this country. It has been considered as a standard ever since the first issue, and met with a wide circulation among the trade. Copies can be secured through news agencies or from the publisher. Price, \$2.50 cloth; \$3.00 leather binding.

THE National Lathe & Tool Co., of 1715 Chestnut street, Philadelphia, has sent out a sheet of cuts from photographs showing the delicate and intricate work which can be performed by its new method of turning wood on geometrical lathes. The samples shown are of all shapes—spirals with some fine turning on them, ovals and many irregular shapes. The company states that by its method what would require forty days of mechanical labor can be done in ten minutes. The designs are many of them exquisite and well worthy the attention of architects.

A NEATLY-BOUND and illustrated catalogue has been sent out by the York Manufacturing Co., Limited, of York, Pa. This catalogue, if it may be so called, describes the ice-making machines which the company make and gives in detail the principle involved in ice manufacture. A large part of the book is taken up in "Useful Information," which contains tables, rules and various data of service to the ice maker. To those interested in this business the publication will be of the greatest value, both in describing thoroughly the principles involved and giving the useful tables for ready reference.

"THE REMARKABLE ADVENTURES OF A ROOSTER AND THREE HENS" is the somewhat humorous title to a little pamphlet on the "Florida" steam heat system of the Pierce, Butler & Pierce Manufacturing Co., Syracuse, N. Y. The illustrations show the expulsion of the chickens from the hen house and their wanderings through the snow covered yard, and finally into the cellar of a house where they roost upon the smoke flue of a "Florida" heater. Point: No heat goes up chimney with this heater. A number of illustrations are given of houses in which this system is in use.

THE Herendeen Manufacturing Co., of Geneva, N. Y., has issued a pamphlet on house warming and ventilation which contains a number of short articles by various writers upon this subject. In the introduction of the book the Herendeen Manufacturing Co. says: "If the reading of these articles suggests the using of our Furman boiler, well and good. If it suggests any other boiler or apparatus for heating made by anyone else, the benefit recurs to others at our expense and the reader's gain." Accompanying this is a descriptive catalogue of the Furman heater and also a blank form for estimates on the cost of installation.

MOVE WEST WITH YOUR MANUFACTORY!

The Reason Why.

Profit on manufacturing in the New England States is very small; profit on agriculture in the far Western States is also small. The Western producer is too far from the Eastern consumer; he cannot give sufficient to the Eastern producer in exchange for his product. Business is based on an exchange of products, not on money. The farmer in Nebraska has a standing offer of so many bushels of corn in exchange for a good stove; the Massachusetts stovemaker offers his stove for so much corn. The two producers are far apart. Long haulage and speculative centres are between them. The stovemaker wants to eat the corn; the farmer requires the stove to warm his home; both must work very hard to pay the intermediate costs of the exchange; hence both complain that the profits are small. Exchange of products is the fundamental principle of all business; the nearer the producers are to each other, provided they produce diametrically opposite necessities, the greater the profits or the leisure. All the ramifications of trade do not alter this principle one iota. The farmer cannot move his farm to Massachusetts; the factory can, however, move to the West. On the foregoing positive economic principle,

that factory located in the West must pay, always provided that the enterprise has been undertaken primarily by the man who thoroughly understands his business; that the location has been selected with prudence after earnest study of the country, both in regard to the supply of raw material and the tributary territory available for the disposition of the manufactured product; that sagacity and judgment pervade every movement concerned in the creation of the factory, and that a comprehensive business intelligence guides it toward the highway of success.

The discovery of coal in the West has changed all former conditions.

Why do Eastern manufacturers complain that their profits are cut to a smaller margin every year? Why do they say and feel that competition is becoming more and more fierce? Why does it cost so much to sell goods to their Western customers? Why do they feel that Western manufacturers are gradually eating into their trade? Why do they regret that they feel compelled to put their sons in their own factories, knowing that the competition is becoming greater and greater; or why, in face of all this, do they establish their sons in branch factories in the East when the more favorable West offers a less competitive market, greater scope for enlargement, a sure field, and that development which is in itself consonant with the development of an ever-growing territory? Have they hazy notions of the conditions of the West? The people who buy their goods are chiefly located Westward. There are smaller towns in the West where rent and food for employees is very cheap. There are towns where slack coal for steam purposes is sold at ninety cents per ton. There are towns where cotton can be laid down cheaper than at manufacturing points in New York State. There are towns where iron is solely wrought that have a surplus of female labor.

Nearly every manufacturer in the West is doing an ever increasing and profitable business, but capital is scarce for the development of all the resources of the West. All these towns are seeking to trade with industrial establishments located near them. The West will trade with the West. These towns are the concentric points of five or six railroads, distributing goods all over the United States. They have electric light, gas and water works, fine residence locations and metropolitan comforts. Illinois, Iowa, Nebraska, Missouri and Kansas offer the best facilities and markets for manufacturing industries. There are towns that will pay a cash bonus to any bona fide factory locating, others that will give free sites and others that will subscribe stock.

There are towns surrounded by coal and raw material in the West right in the midst of the customers of Eastern factories, and others that have inexhaustible water-power. Is it consistent with that energy which has made this great country a success to wait until others have filled the field, and then, by force of economic exigencies, to have to follow to secure what remains, or should this matter be given earnest consideration?

The field for manufacturing in the near future is the West. Immense establishments, doing a prosperous business, are already located there. Let timely action be taken.

The Chicago, Burlington & Quincy Railroad Co. has already established on its line a large number of prosperous manufacturing enterprises, and desires to increase the number to the end that the population it serves may be increased, and that its unsurpassed transportation facilities be utilized to their fullest extent. It assures to those proposing to locate on its line the best possible means of communication with the rest of the world, and considers the interests of its patrons so located as identical with its own. It invites correspondence with manufacturers intending to move West, to the end that both parties shall profit thereby.

Write to the undersigned for "The Industrial West," a free pamphlet upon this subject.

P. S. EUSTIS,
Genl. Pass. and Tkt. Agt. C., B. & Q. R. R.,
Chicago, Ill.

To the New England Coast.

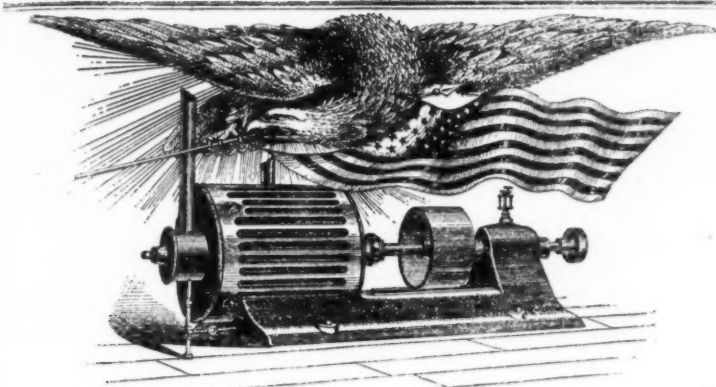
The most delightful way of reaching the seashore resorts of New England from South or West is by the Fitchburg Railroad (Hoosac Tunnel Route) from Troy, N. Y., through the beautiful Deerfield valley. The road runs through the southern part of the Green mountains, and literally through five miles of them, for here we have the "great bore" of Massachusetts—"the Hoosac tunnel." The Deerfield and Miller rivers wind through a great part of this valley, adding much to the varying scenery. An occasional turn in the road

will bring in view a beautiful perspective, and instinctively the question arises, "Can anything be more beautiful?" From the terminus of the road in Boston it is but a short ride by carriage or street-car to the many lines of boats and railroads that lead to the shores of Maine and Massachusetts.

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THE NATIONAL CORDAGE COMPANY.

NEW YORK, July 5th 1892.

The Board of Directors of THE NATIONAL CORDAGE COMPANY have this day declared the regular quarterly dividend of TWO PER CENT. on the Preferred and TWO AND ONE-HALF PER CENT. on the Common Stock of the Company, both payable on the 1st day of August next at the transfer office of the Company, 135 Front St., this city. The transfer books will close July 15 at 3 o'clock P. M. and reopen August second next. CHARLES DAVIS, Treasurer.

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WANTED-A FOREMAN for a Foundry. Must understand both heavy and fine work. Address "W. J. C." care MANUFACTURERS' RECORD. A72

WANTED-A PRACTICAL MAN to take charge of a cannery establishment upon Indian River, with or without capital. Must be thoroughly sober and energetic. Address R. P. PADDISON, Titusville, Fla. A5

WANTED AN EXPERIENCED, RELIABLE MAN to manage a Steam Laundry. Address HENRY E. FALES, Hariman Tenn. 5

WANTED Experienced and Reliable Man as SUPERINTENDENT of a Canning Factory. Address J. S. GOFF & CO., Batesville, Miss. J25

WANTED-A FOREMAN to take charge of a Planing Mill in North Carolina, with a capacity of 20 M feet per day. Must thoroughly understand the keeping of the machinery and getting out the lumber for the Northern and Eastern markets. Must be sober and reliable and a hustler. State salary required. Apply to J. HICKSON & CO., Lynchburg, Va. J29

WANTED-TRAVELING SALESMEN for Pennsylvania and territory tributary to Cincinnati. Must have experience in planning, estimating and constructing Hot Water Heating Plants. State age, record, and with whom. Must be an order getter. Unexceptional references required. Address "HOT WATER HEATER," care MANUFACTURERS' RECORD. J24

WANTED-A man thoroughly posted in improved methods of Tanning, also reliable finisher. Address COMER & SMITH, James P. O., Ala. Jy 22

WANTED-A man who understands the business to join me in working and preparing GRAPHITE for market. W. P. POLAND, Llano Texas. Jy22

WANTED-Experienced Man to join the advertiser in manufacturing PLUG TOBACCO. Good opening for the right man. Address "TOBACCO," care MANUFACTURERS' RECORD. Jy 22

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WANTED-Position in the South or West as STENOGRAPHER by a young man of twenty-seven now employed by a manufacturer as General Correspondent and Book-keeper, and can furnish good recommendations. Address WALTER P. NORRIS, No 217 W. Second St., Cincinnati, Ohio. A12

WANTED-Situation in office of manufacturing concern by young man 21 years old. Several years' experience as Book-keeper and Stenographer, and in general office work. Good references. Address "T. N. T.," care MANUFACTURERS' RECORD. A 2

WANTED-A position as railroad or city SURVEYOR. Have had four years' experience in the U. S. Coast and Geological Survey. Instruments furnished and price reasonable. W. P. BULLOCK, Bullock, N. C. A12

WANTED-A SITUATION by a PRACTICAL DYER of cotton and linen piece goods in light or dark shades. Good references. Age 35. Steady and industrious, with fifteen years' experience in England, Ireland and the States. Address P. O. Box 279, Lawrence Mass. A12

WANTED-A young man with good knowledge of machinery would like a position in a machinery and supply house. Best of references given. Address CHAS. T. BEALL, Winston, N. C. A12

WANTED-By an experienced journalist, a situation on a Southern newspaper. For references and particulars address "DOCTOR," 661 N. Eleventh St., Philadelphia, Pa. A12

CHEMIST graduate of a German Polytechnical Institute, good organic, desires position in Laboratory or Chemical Works. Willing to start on small salary. Address "B. 10," care MANUFACTURERS' RECORD. A12

WANTED-A position in the South by a Mechanical Engineer and Draughtsman, age thirty-three. Fifteen years' experience in railroad, mechanical and general engineering; is familiar with constructions in iron, steel and wood, and capable to design and supervise the construction of manufacturing plants. Best of references. Address "AJAX," care MANUFACTURERS' RECORD. A5

WANTED-Position by a young man (twenty-two); is Stenographer, Typewriter and Double-Entry Bookkeeper; good penman and has fine English education; moderate salary to commence with. Can furnish machine. Address "MACK," care MANUFACTURERS' RECORD. A5

SECRETARY-A thoroughly competent Stenographer and Typewriter, age 24, now holding position as secretary in manufacturing industry, desires to make a change. Satisfactory reasons given. Address "SECRETARY," care MANUFACTURERS' RECORD. A5

J. E. MINTER, traveling salesman for Henry J. Stevens' Sons, a water pipe and fire brick manufacturers, Macon, Ga., wants a side line that would suit the same trade. Address above. J29

WANTED-A POSITION by a young man age 23 years, with some knowledge of Bookkeeping, also some experience in Hardware Business and Planing Mill. Good references. Address MAURICE CRIPPS, Graig City, Va. Jy29

WANTED-Situation, by a PRACTICAL MILLWRIGHT who is skilled in every branch of the trade. Best of references given. Address "MILLWRIGHT," care of J. H. Boyd Box 144, Manchester, Va. Jy22

WANTED-Situation as NIGHT WATCHMAN, by a sober and reliable man of twenty years' experience. References. Can leave Cincinnati. Address W. C. KNIGHT, 31 Main St., Cincinnati, Ohio. Jy22

PROPOSALS.

NOTICE TO CONTRACTORS.

MAJOR'S OFFICE,
ASHEVILLE, N. C., June 30, 1892.
SEALED PROPOSALS will be received by the Mayor and Joint Board of the City of Asheville, at this office, until 3 o'clock P. M., on the 1st day of August, 1892, for furnishing and setting up in the pump house on the Swannanoa River, one Steam Pumping Engine and Boiler, capacity 1,000,000 gallons in 24 hours; one Power Pump and Water Wheel, capacity 750,000 gallons in 24 hours. Also for furnishing and laying about three miles of 16-inch Cast Iron Water Pipe. Plans can be seen and specifications obtained at the office of the City Engineer, Asheville, N. C.
C. D. BLANTON, Mayor.
R. M. LEE, City Engineer.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., July 12, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 9th day of August, 1892, and opened immediately thereafter, for all the labor and materials and fixing in place complete a first-class Heating and Ventilating Apparatus for the U. S. Postoffice Building at Canton, Ohio, the U. S. Postoffice Building at Lansing, and the U. S. Postoffice Building at Jackson, Michigan. General drawings and specification may be had on application at this office or the office of the Superintendent of each of the above-named buildings. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Heating and Ventilating Apparatus for the U. S. Postoffice Building at Canton, Ohio," "the U. S. Postoffice Building at Lansing, Michigan," or the "U. S. Postoffice Building at Jackson, Michigan," (as the case may be) and addressed to W. J. EDBROOKE, Supervising Architect.

THEASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., July 8th, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 3rd day of August, 1892, and opened immediately thereafter, for all the labor and materials required for the stone and brick work, roof covering, approaches, &c., for the superstructure, and also for the cast-iron columns, steel floor, ceiling and roof construction, &c., of the U. S. Courthouse, Postoffice, &c., building at Wilmington, Delaware, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Wilmington, Delaware. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Stone and Brick Work, Roof Covering, Approaches, &c., or for 'Cast-Iron Columns, Steel Floor, Ceiling and Roof Construction, &c., of the U. S. Courthouse, Postoffice, &c., building at Wilmington, Delaware," as the case may be, and addressed to W. J. EDBROOKE, Supervising Architect.

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SOUTHERN LUMBER DIRECTORY.

A List of Leading Lumber Dealers and Manufacturers in the South.

This list of representative Southern lumber merchants and manufacturers is published for the benefit of those who desire to reach responsible houses in this branch of business in the South. Readers of the MANUFACTURERS' RECORD who have occasion to correspond with any of the firms mentioned below will confer a favor by mentioning this paper.

Yellow Pine.

I. B. Gordon & Co., Alpine, Ala.
Villa Rica Lumber Co., Anniston, Ala.
J. R. Adams & Sons, Birmingham, Ala.
Hawkins & Smith, Birmingham, Ala.
C. T. Hughes & Co., Birmingham, Ala.
Riddle & Simpson, Birmingham, Ala.
Southern Supply Co., Birmingham, Ala.
Marbury & Jones, Bozeman, Ala.
D. W. & U. Blacker, Brewton, Ala.
W. W. Weaver, Castleberry, Ala.
J. A. Dudley, Clanton, Ala.
O. A. Duke, Clanton, Ala.
L. B. Wells, Clanton, Ala.
H. C. Higman & Co., Decatur, Ala.
Dunham Lumber Co., Dunham, Ala.
Gadsden Lumber Co., Gadsden, Ala.
Tuscaloosa Lumber Co., Hull, Ala.
Bay City Lumber Co., Mobile, Ala.
E. B. Vaughan, Mobile, Ala.
Alabama Lumber Syndicate, Montgomery, Ala.
S. B. Allen & Co., Montgomery, Ala.
W. A. Drives & Co., Montgomery, Ala.
Moore, Kirkland & Co., Montgomery, Ala.
Wagar Lumber Co., Wagar, Ala.
W. W. Wadsworth, Wadsworth, Ala.
Arkadelphia Lumber Co., Arkadelphia, Ark.
Empire Lumber Co., Ashton, Ark.
Long Bell Lumber Co., Buckner, Ark.
Cotton Belt Mill Co., Cotton Belt, Ark.
Eagle Lumber Co., Eagle Mills, Ark.
Red River Lumber Co., New Lewisville, Ark.
A. J. Neimeyer Lumber Co., Waldo, Ark.
Fordyce Lumber Co., Fordyce, Ark.
The Florida Phosphate Co., Ltd., Phosphoria, Fla.
J. S. Betts & Co., Ashburn, Ga.
Donelson Lumber Co., Donelsonville, Ga.
Ocean Springs Lumber Co., Ocean Springs, Miss.
Perkins Manufacturing Co., Augusta, Ga.
Stillwell, Millen & Co., Savannah, Ga.
P. F. Putney, Hardaway, Ga.
Charles Bewick & Co., Hazelhurst, Ga.
Alderfer & Bull, Isabella, Ga.
Hogan & Winger, Kensington, Ga.
J. A. Williams, Sumner, Ga.
A. J. Duncan & Co., West Bowersville, Ga.
W. E. Mayne, Carpenter, Ky.
P. Hendrickson, Conant, Ky.
Perkins & Miller Lumber Co., Ltd., Westlake, La.
Lock-Moore & Co., Ltd., Westlake, La.
R. J. Aycock, Longstreet, La.
C. P. Brasher, Marthaville, La.
Joseph Horst, Maugansville, Md.
Elliott, Crawford & Co., Myrtle, Miss.
P. B. Myers & Son, Myrtle, Miss.
B. J. Cansey, West, Miss.
Cary E. Spence, Pass Christian, Miss.
Keystone Lumber & Imp. Co., Bogue Chitto, Miss.
Page Lumber Co., Aberdeen, N. C.
The Greenville Land & Imp. Co., Greenville, N. C.
Gulf Lumber Mfg. Co., Greensboro, N. C.
The A. F. Withrow Lumber Co., Millboro Depot, Va.
U. B. Simpson & Son, Naruna, Va.

North Carolina Pine.

Thomas J. Jones, Council's Station, N. C.
Goldsboro Lumber Co., Goldsboro, N. C.
G. Vyne & Son, Wilkesboro, N. C.
John Hickson & Co., Lynchburg, Va.

Cypress.

Morris & England, Keo, Ark.
Cypress Lumber Co., Sherrill, Ark.
T. O. Wilson Lumber Co., Tillar, Ark.
Nuchner & Brown, Peach Orchard, Ark.
Moline Lumber Co., Helena, Ark.
J. M. Milburn & Bro., Greenway, Ark.
J. C. McCain, Greenway, Ark.
Lawless & Kyle, Franklin, La.
Louisiana Cypress Lumber Co., Harvey, La.
Lutcher & Moore Lumber Co., Lutcher, La.
Callahan & Lewis Mfg. Co., Patterson, La.
W. R. Emerson, Emerson, Fla.
J. C. Burleigh, Midland, Fla.
F. S. Bamberg, Jasper, Fla.
S. J. Temple, Temple's Mills, Fla.
J. P. Little, Sumner, Fla.
Geo. H. Barker, Waldo, Fla.
A. A. Bunnell, Raulerson, Fla.
Windemere Land & Lumber Co., Windemere, Fla.
Kelly, Cosby & Co., Jug Tavern, Ga.
Dietrich & Dopson, Lenox, Ga.
W. T. McArthur, McArthur, Ga.
W. H. Moxley & Co., Macon, Ga.
W. R. Peterson & Co., Wadley, Ga.
McEwen & Murray, New Orleans, La.
Hanson & Smith, Wilmington, N. C.
J. C. Fulton, Arawacas Pass, Texas.
Calcasieu Lumber Co., Austin, Texas.
M. T. Jones & Co., Childress, Texas.
J. H. Folkey, Kerville, Texas.

Hardwoods.

Martin & Vaughan, Bellefonte, Ala.
North Alabama Lumber Mfg. Co., Bridgeport, Ala.
Bridgeport Lumber Co., Bridgeport, Ala.
Hill & Mitchell, Center Star, Ala.
W. A. Koepfel, Coaling, Ala.
Decatur Lumber Co., Decatur, Ala.
H. S. Freeman, Decatur, Ala.
Black Warrior Lumber Co., Demopolis, Ala.
Alabama Lumber & Mfg. Co., Gurley, Ala.
Clifton & Hendrix, Jasper, Ala.
Elliott & Carter, Jasper, Ala.
W. M. Beatty, Austin, Ala.
J. W. Ray, Arkadelphia, Ark.
Desha Lumber Co., Arkansas City, Ark.
Batesville Lumber Co., Batesville, Ark.
Russell & Elder, Beebe, Ark.
South'n Hardwood Lumber Co., Black Rock, Ark.
E. M. Ford Land & Timber Co., Gilmore, Ark.
Kelley & Wells Lumber Co., Newport, Ark.
Cream City Lumber Co., Lamberthville, Ark.
J. M. Meffert, Lowell, Fla.
Ray & Geise, Brownwood, Ga.
Montford & Mitchell, Butler, Ga.
Glasgow & Henderson, Cassville, Ga.
Green & Eshum, Clay Hill, Ga.
W. H. Allen, Cordele, Ga.
Greer Bros., Ada, Ga.
D. T. Harris, Dixon, Ga.
W. T. Opie, Dover, Ga.
A. J. McMullen, Hartwell, Ga.
Matthews & Anderson, Knoxville, Ga.
R. W. Ballard, Newton Factory, Ga.
O. W. Wadley, Rogers, Ga.
L. T. Brawner, Adairville, Ky.
G. W. Hummer, Adairville, Ky.
W. Conn & Son, Bedford, Ky.
Snider Bros., Berea, Ky.
Gilson & Hale, Flat Lick, Ky.
J. L. Naylor, Wickliffe, Ky.
Samuel Anglen, Lafayette, Ky.
H. E. Miller, Lewisburg, Ky.
Fetter Cochran & Co., Louisville, Ky.
J. C. Williamson, Mouth of Ford, Ky.
The Cumberland Co., Middlesborough, Ky.
Waters & Bringham, Pineville, La.
J. H. McBride, Winnfield, La.
The Loomis & Hart Mfg. Co., Chattanooga, Tenn.
Smith & Co., Reedy Ripple, W. Va.
Shelly & Wirgman, Romney, W. Va.

Shingles.

A. C. Danner, Mobile, Ala.
J. Bradley, Hartsell's, Ala.
Conecuh & Patsaliga Lumber Co., Luverne, Ala.
G. N. Buchanan, Luverne, Ala.
J. D. Cameron & Son, Mobile, Ala.
Mobile Shingle Co., Mobile, Ala.
Mountain & Sons Mobile, Ala.
C. G. Richards & Son, Mobile, Ala.
Stewart & Butt, Mobile, Ala.
Gulf States Lumber Co., Montgomery, Ala.
D. Goulet & Co., Black Rock, Ark.
F. McKay, Black Rock, Ark.
Camden Shingle Mill Co., Camden, Ark.
Price Lumber Co., Paragould, Ark.
Carey & Ollinger, Bagdad, Fla.
A. L. Wellman & Co., Beresford, Fla.
Florida Shingle Mills, Brooksville, Fla.
W. Springstead & Son, Brooksville, Fla.
Mearns Shingle Mill, Davenport, Fla.
Wm. A. McCann, Jacksonville, Fla.
A. G. Russel, Oviedo, Fla.
Little & Chapman, Rosewood, Fla.
P. G. Grant, Atlanta, Ga.
T. E. Collier, Cordele, Ga.
King & Bursch, Hawkinsville, Ga.
Yarbrough & Perry, Fullington, Ga.
Ino. Akers & Co., Scotland, Ga.
Baily Bros., Toccoa, Ga.
Mayfield Shingle Co., Wishart, Ga.
Worth Lumber Co., Worth, Ga.
G. W. Clere, Coalton, Ky.
Monroe Smith, McKinney, Ky.
The J. H. Poe Shingle Co., Lake Charles, La.
Harris & Thornton, Chattanooga, Tenn.
L. Miller Shingle Co., Orange, Texas.
Kizer Lumber Co., Texarkana, Texas.
Fritz Sitterding, Richmond, Va.
Curley & Rogers, Norfolk, Va.
Nottingham & Wrenn, Norfolk, Va.
Ino. L. Roper Lumber Co., Norfolk, Va.

Staves and Heading.

F. W. Sharp & Co., Larkinsville, Ala.
J. R. Adams & Son, Longview, Ala.
Montgomery Stave & Bldg. Co., Montgomery, Ala.
J. C. Sheets & Co., Montgomery, Ala.
P. V. Deland, Black Rock, Ark.
Hammett & Bailey Stave Co., Greenway, Ark.
Arkansas Stave Works, Greenway, Ark.
J. F. Hasty & Son, Paragould, Ark.
G. M. Rosegrant, Paragould, Ark.
Wilson Bros., Piggott, Ark.
Backus Bros., Pine Bluff, Ark.
Little Rock Cooperage Co., Little Rock, Ark.
Tampa Lumber Co., Tampa, Fla.
Hagan & Platt, Pine Level, Fla.
R. H. Brewer, Cedar town, Ga.
Georgia & Tennessee Lumber Co., Laconte, Ga.
F. H. Waring & Co., Cement, Ga.
Allen & Briggs, Bardwell, Ky.
F. B. Freeman, Cumberland Falls, Ky.
Johnson & Overshiner, Hopkinsville, Ky.
T. H. Meahan, Louisville, Ky.
J. G. Evans & Co., Moorehead, Ky.
Tippett & Co., Moorehead, Ky.

Edward Farley, Paducah, Ky.
Lester & Little, Sloans Valley, Ky.
Pinnell & Webb, Somerset, Ky.
George D. Eike, New Orleans, La.
E. O. Felton, Ronceverte, W. Va.
J. Beckwith & Co., Waverly, W. Va.

Railroad Ties.

W. J. Felt, Greenup, Ky.
G. & A. Kopp, Louisville, Ky.
Southern Tie & Lumber Co., Louisville, Ky.
James S. Pope, Halls, Md.
P. L. Conquest & Co., Norfolk, Va.

Spokes and Handles.

Jacob Wise & Son, Fulton, Ky.
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Thomasville Spoke Works, Thomasville, N. C.
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Southern Real Estate Directory.

For the convenience of the many readers of the MANUFACTURERS' RECORD it has been deemed advisable to collect under this head a reliable list Realty Agencies of the Southern States. The value of such a list for the purpose of Real Estate Reference will immediately become apparent to all who are interested in the growth of this section.

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MEMPHIS—Hodge & Bro., 59 Madison St., Real Estate Agents and Dealers.

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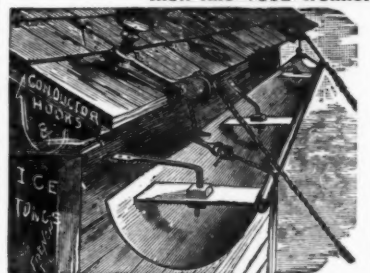
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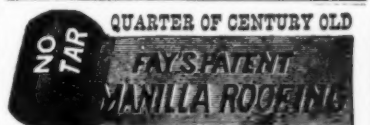
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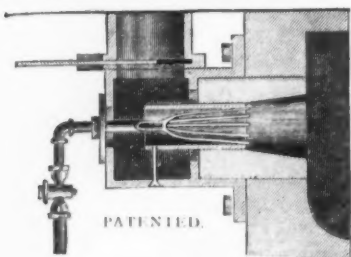
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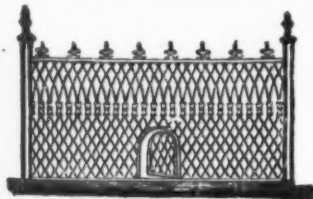
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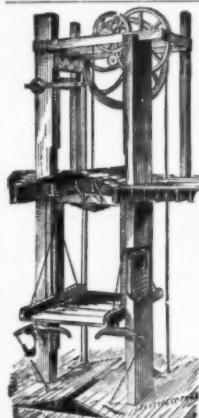
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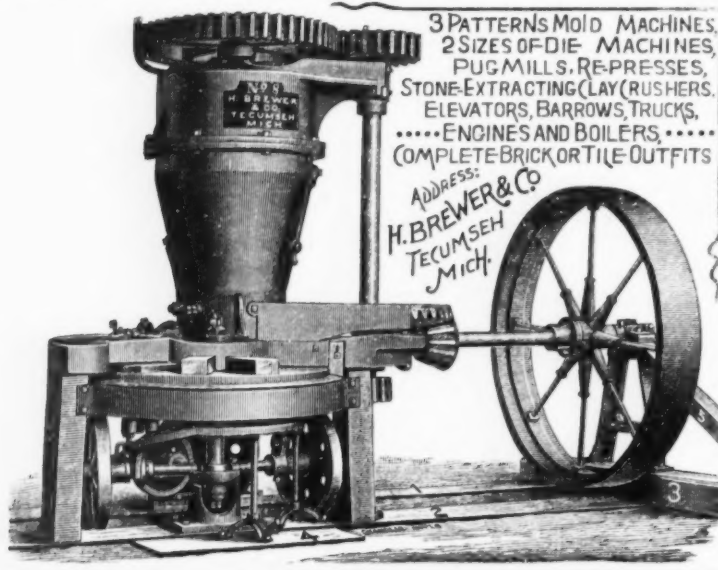
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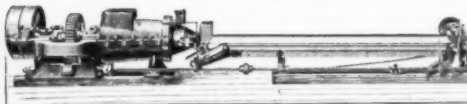


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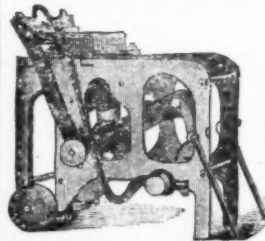
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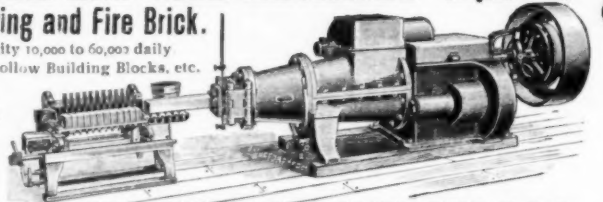
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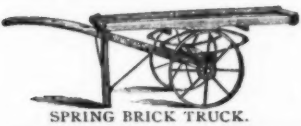
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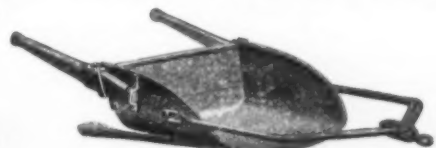
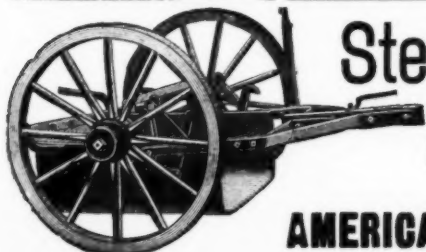
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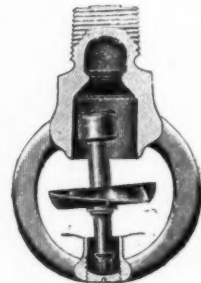
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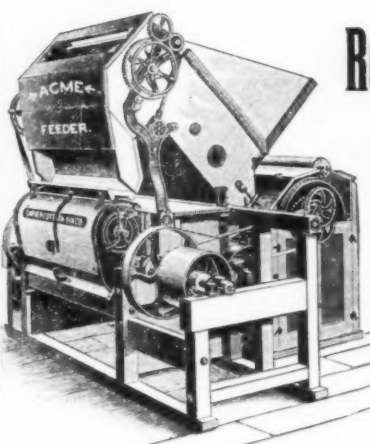
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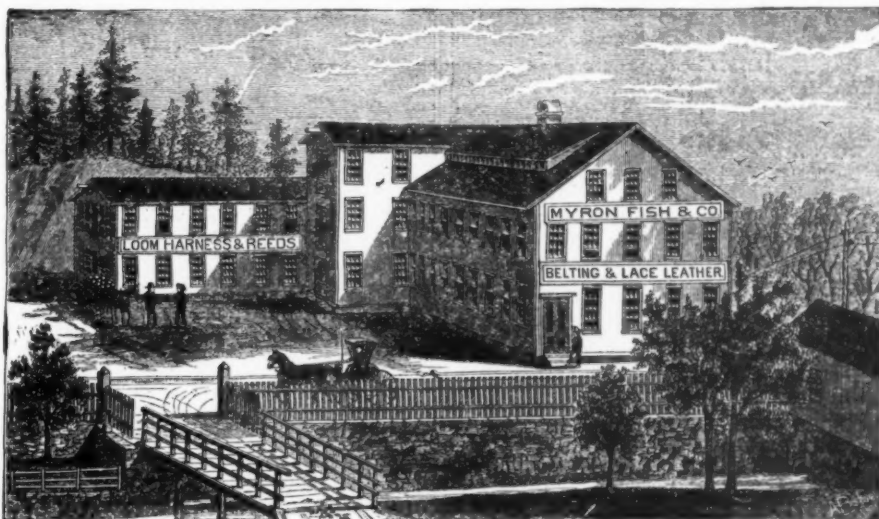
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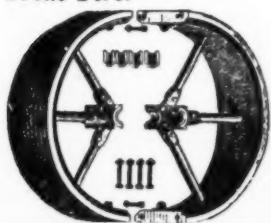
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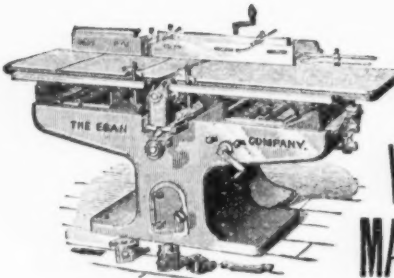
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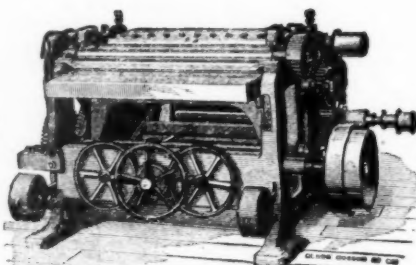
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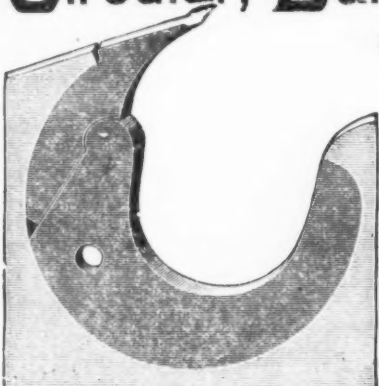
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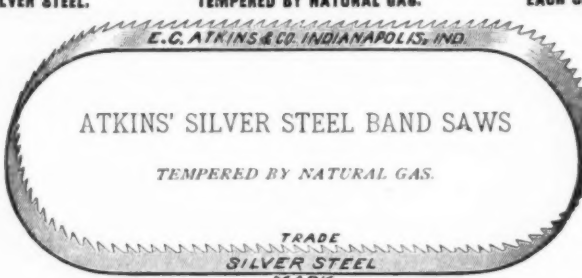
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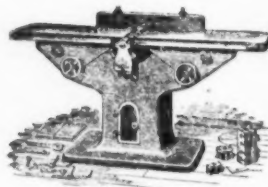
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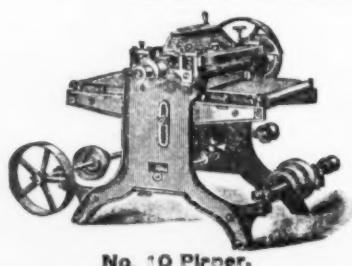
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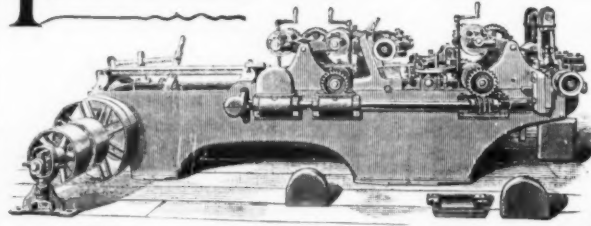


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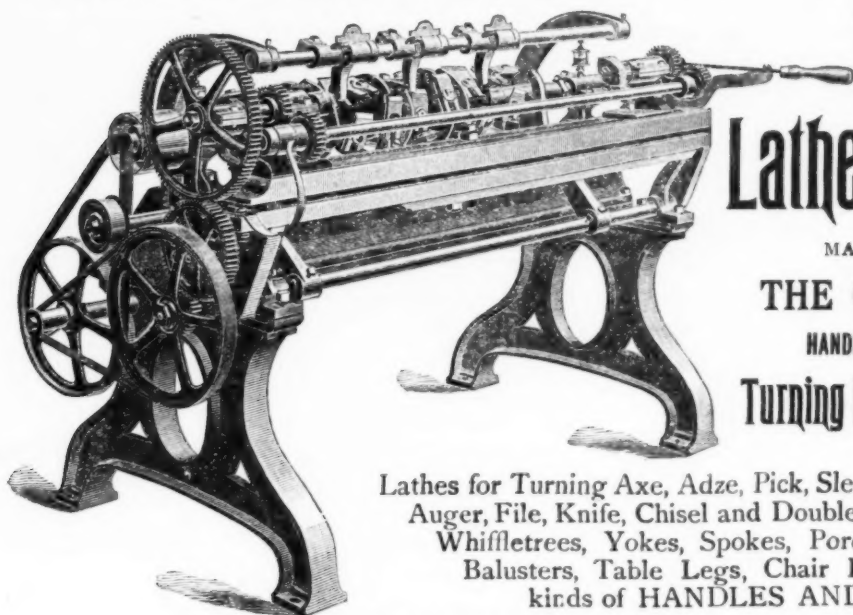
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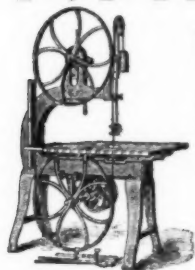
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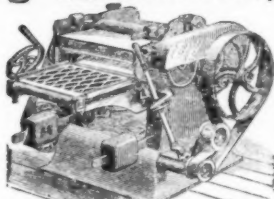
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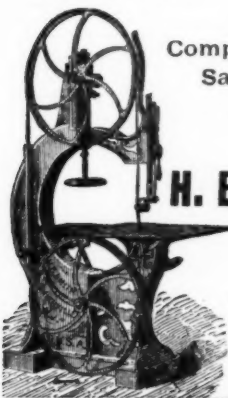
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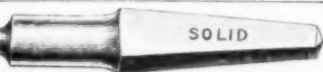
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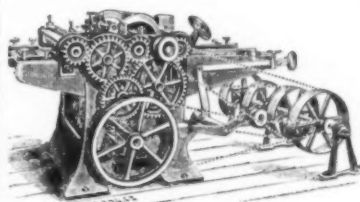
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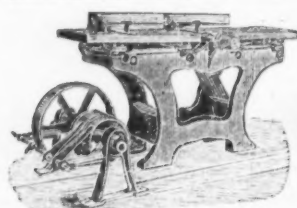
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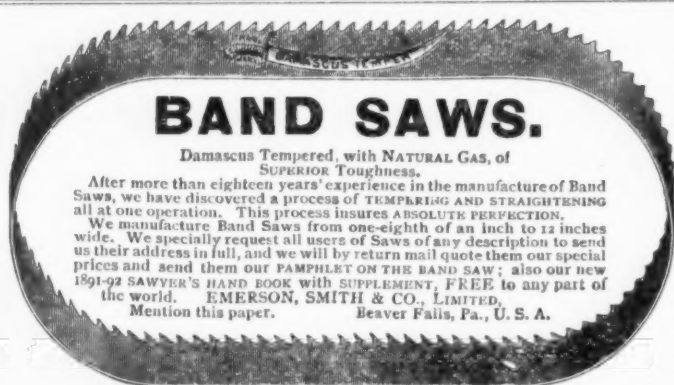
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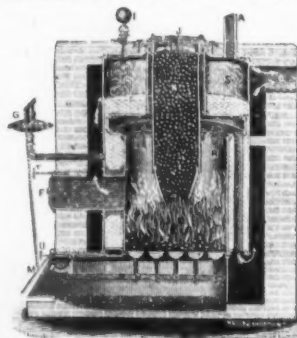
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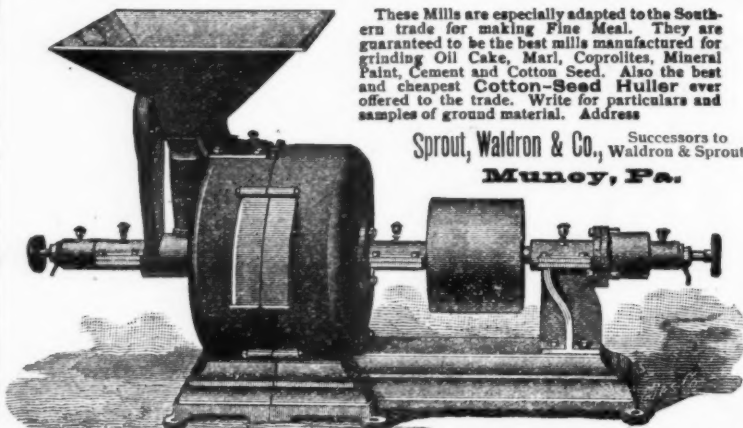
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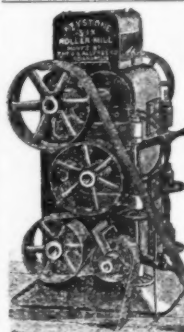


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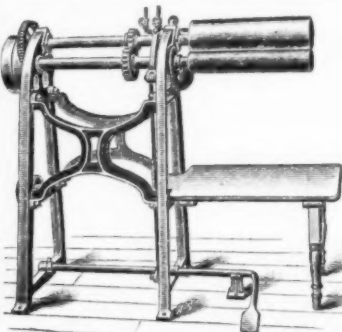
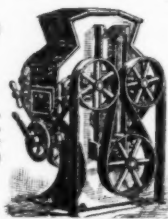


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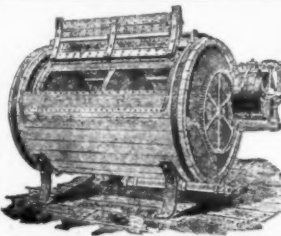
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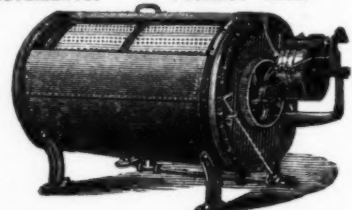
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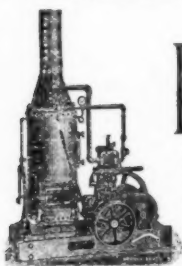
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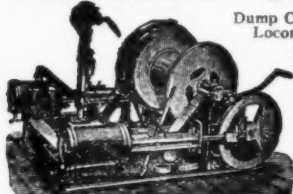
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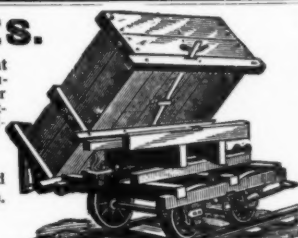
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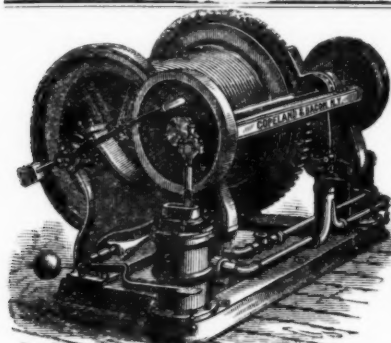


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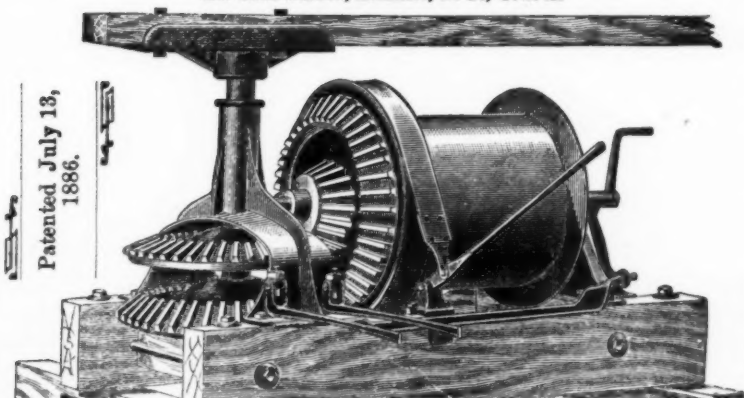
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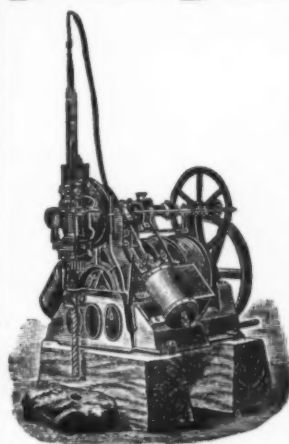
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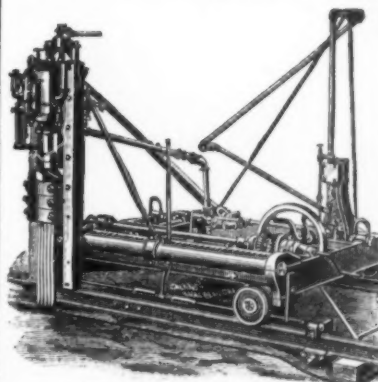
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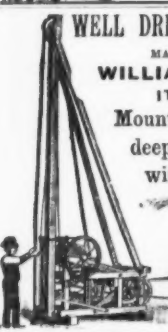


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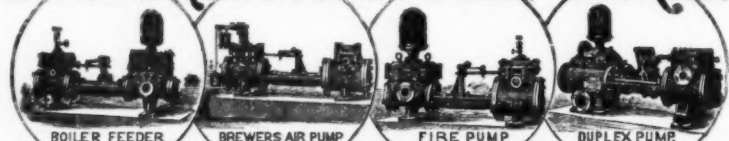
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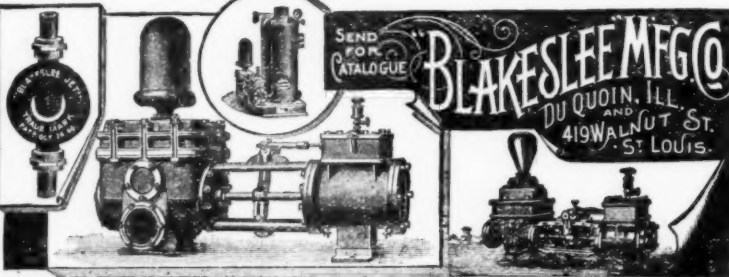
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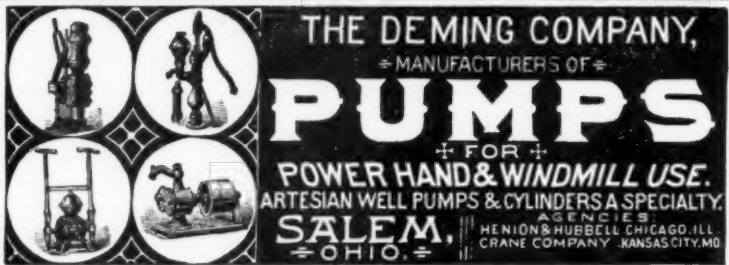


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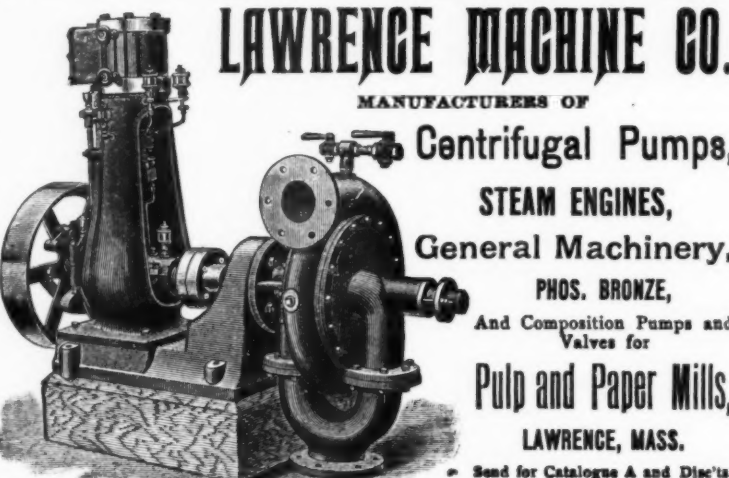
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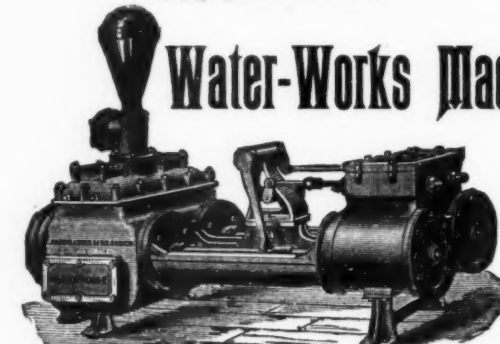
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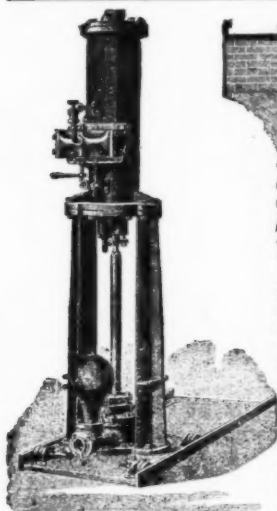
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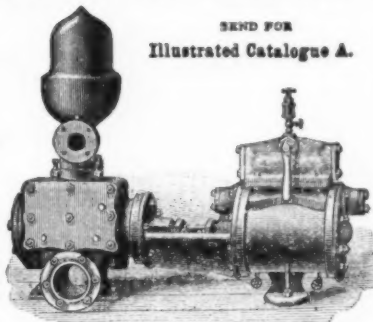


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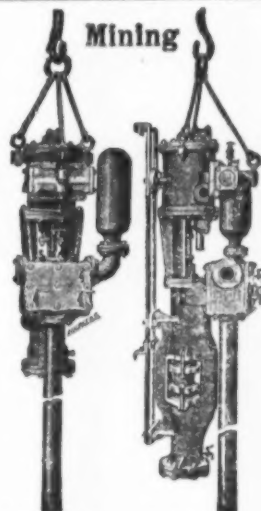
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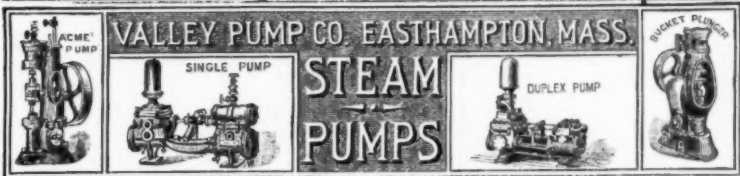


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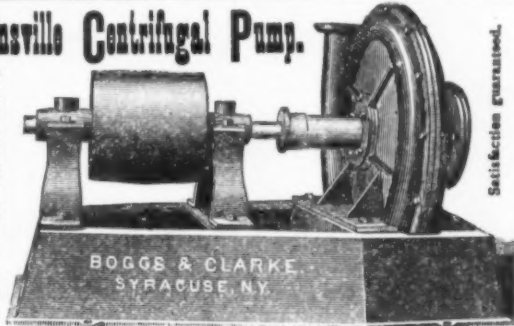
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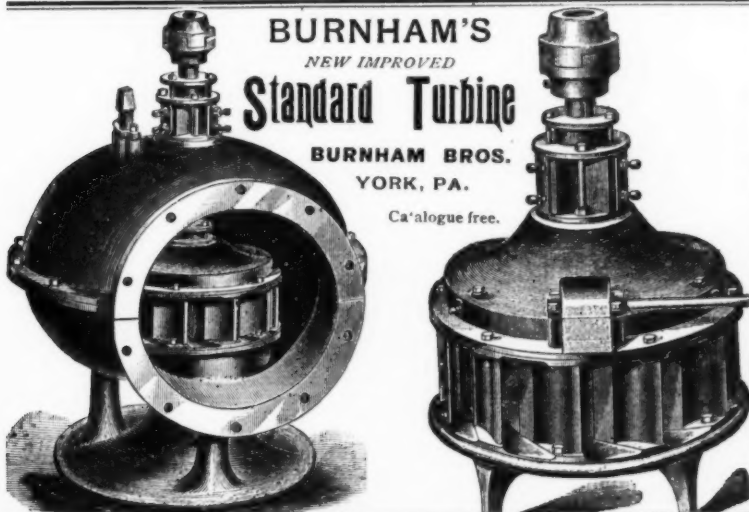
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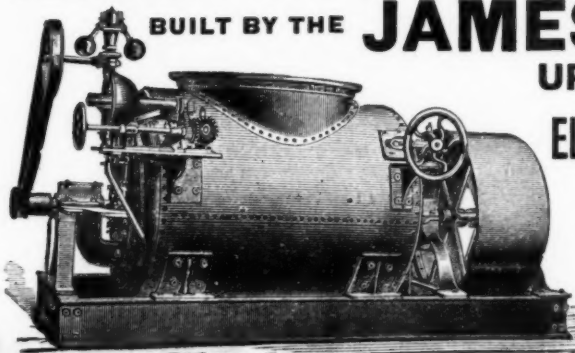
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Population March 4, 1892, actual count, 348.

Gain in one year 625 per cent.

Townsite purchased November 11, 1890; act of incorporation passed by the Legislature, March 4, 1891; first lot sold at private sale, May 12, 1891. Within the first year of its existence ten miles of streets have been graded, and \$22,000 spent in public improvements. Where prior to March 4, 1891, there was only a farm settlement without pretensions to being even a village, there is to-day a thriving, busy, growing, trading and manufacturing center, with

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One Hardware Store,
One Furniture Store,
Ten General Merchandise Stores,
Three Saw Mills, Sash and Blind Factories,
One Foundry and Machine Shop,
A Handsome, Well-Edited, Home Print Newspaper, The North Wilkesboro News,
One School,
Two Churches Under Way,

Two Brick Yards in operation, and a number of other enterprises practically secured.

Arrangements are about completed for a Woolen Mill.

A large iron front brick block, containing Bank Building, two Store Rooms, Opera House, and Printing Office; A graded School Building and an Iron Bridge across the Yadkin River, in the Eastern part of town, will be completed during the spring and summer.

Turnpike roads to Tennessee and Virginia are about completed; county roads leading into town are being improved and numerous good new ones built, with the intention of making this the center for all the wagon trade of this section.

A tobacco warehouse for the sale of the high grade leaf of this district will be built during the summer, so as to give a home market for the tobacco crop that will be grown this year.

Compare this record with that of any other new town you have heard of during the past dull season.

NORTH WILKESBORO,

Is 75 miles west of Winston-Salem, at the present terminus of the Northwestern North Carolina Railroad, which when ultimately completed to Bristol, Tenn., will give the shortest route between Norfolk and Cincinnati. North Wilkesboro is the most important trading point between Winston-Salem and Bristol, and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States Postal Map on an air line 75 miles southeast of Bristol, 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southeast of Mt. Airy, and 80 miles south of the Norfolk & Western Railroad, in the valley of the Yadkin, between the Brushy Mountains on the South and the Blue Ridge on the North. Climate, healthfulness, water, drainage and location unsurpassed by any town in North Carolina.

The townsite consists of 1,088 acres, located, by the way on a farm originally owned by General John B. Gordon's grandfather. The first public auction sale of lots was held December 2, 1891, and 188 lots were sold. Purchasers have in many cases been able to resell at a handsome profit. The company has sold 50 lots at private sale since then, on many of which houses are now being erected. It is a significant fact that among the business buildings erected a large per cent. are substantial brick structures, while for architectural beauty and cost many of the residences are much superior to those usually found in a town so young.

At the second auction sale, May 11th, 1892, 35 business lots and 44 residence lots sold for \$16,490, an average of \$8.35 per front foot, which is \$2.53 per front foot (or 44 per cent.) more than the average at the sale last December, which was the best sale made in North Carolina during last year. Since the sale, a contract has been closed for the location of another large saw mill, planing mill, sash, door and blind factory combined, which will do a large shipping business. A contract is closed for the location of extract works with a capital stock of \$300,000. The plant will cost \$125,000 and will cover six acres of land. Twelve families from the North will move down. The company will erect a large electric-light plant in connection with the extract works. North Wilkesboro will get there and will not be long doing so.

Through the townsite runs a stratum of serpentine stone, 200 feet in width, and also a bed of iron ore equal in quality to that of Cranberry. The Town Company also owns 4,100 acres of mineral, granite and timber lands in Wilkes County. It is probable that the work of developing the great mineral and timber interests of the section will be commenced in a short time, and on an extensive scale.

Sites will be donated and stock subscribed to such manufacturing enterprises as may be advantageously located here.

The policy of the Company is a most liberal one in this respect, it being determined to aid all legitimate enterprises to any reasonable extent. There are 328 miles of water courses within the borders of Wilkes County, furnishing to the vicinity of North Wilkesboro a water power as great as Fall River. The climate, while not moist, is neither harsh nor dry, and is especially suitable to the spinning of fine cotton yarns, such as cannot be made in the extreme South or North. There is also a fine opportunity here for bleacheries, to the establishment of which at Southern points there is a tendency at present. As they can't go where sluggish streams, impregnated with vegetable matter, abound, the quick flowing streams of clear mountain water, so numerous about North Wilkesboro, afford everything desired. Numerous other industries will do well at North Wilkesboro, and will be most substantially encouraged to locate there.

Capitalists, Home Seekers, Health Seekers, Manufacturers of wood and iron, and many other industrial workers may well investigate North Wilkesboro's advantages.

The above-described townsite and other property belongs to the Winston Land & Improvement Co., which was chartered by act of Legislature, session of 1887; ratified March 4, 1887, chapter 82. Authorized capital \$1,000,000. Present capital stock \$125,000, all subscribed and paid up.

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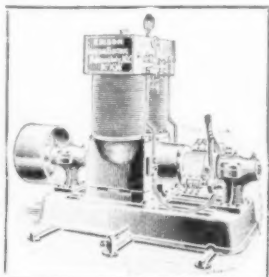
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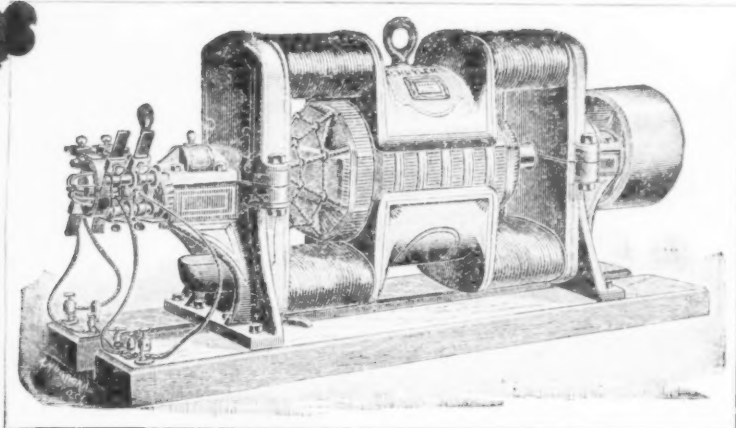
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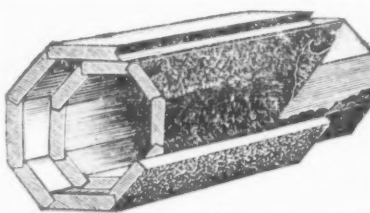
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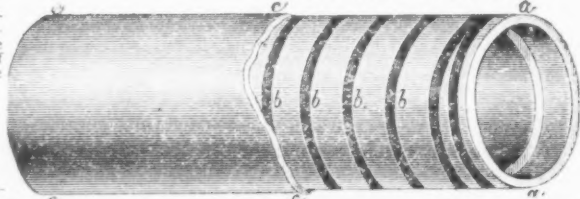
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